Exhibit 2

Highly Confidential

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

BRUCE S. SHERMAN,

Plaintiff,

v.

BEAR STEARNS COMPANIES INC., JAMES CAYNE, WARREN SPECTOR and DELOITTE & TOUCHE LLP

Defendants.

Index No.:

EXPERT REPORT OF JOHN D. FINNERTY, Ph.D.

HIGHLY CONFIDENTIAL

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I, John D. Finnerty, declare pursuant to 28 U.S.C. § 1746, as follows:

I. Qualifications

1. I am a Managing Director at AlixPartners, LLP, a financial and operational consulting firm. I have extensive experience in securities valuation, derivatives valuation, solvency analysis, business valuation, the calculation of damages, and litigation support for matters involving securities fraud, breach of contract, commercial disputes, valuation disputes, solvency, fairness, breach of fiduciary duty, and employment disputes involving the valuation of employee stock options. I have testified as an expert in securities and other financial matters, broker hiring disputes, and valuation disputes, in federal and state court and in arbitration and mediation proceedings. I have also testified as an expert in bankruptcy court concerning the valuation of securities and businesses and the fairness of proposed plans of reorganization.

2. Prior to joining AlixPartners, I was a Managing Principal at Finnerty Economic Consulting, LLC ("FinnEcon"), which provided financial consulting and valuation services to law firms, corporations, industry associations, and government agencies. Prior to forming FinnEcon in 2003, I was a Managing Principal at Analysis Group, Inc., an economic consulting firm. Prior to joining Analysis Group, I was a Partner (non-audit) in the PricewaterhouseCoopers Financial Advisory Services Group. I have also held investment banking positions at Morgan Stanley, Lazard Frères, McFarland Dewey, and Houlihan Lokey Howard & Zukin.

3. I am on leave from my position as a Professor of Finance at Fordham University's Gabelli School of Business, where I was the founding Director of the school's Master of Science in Quantitative Finance Program. I was awarded early tenure in 1991, and I

received the Gladys and Henry Crown Award for Faculty Excellence in 1997. I have published 15 books, including *Corporate Financial Management*, 4th ed., *Project Financing*, 3rd ed., and *Debt Management*, and I have published more than 100 articles and professional papers concerning corporate finance, fixed income, and business and securities valuation.

4. I have previously published a paper on the calculation of damages in securities fraud cases entitled, "An Improved Two-Trader Model for Measuring Damages in Securities Fraud Class Actions," which was published in the Spring 2003 issue of the Stanford Journal of Law, Business & Finance. I have also published a paper on the settlement amounts in securities fraud class actions, entitled, "Determinants of the Settlement Amount in Securities Fraud Class Action Litigation," which was published in the Summer 2006 issue of the Hastings Business Law Journal. I have extensive experience testing for market efficiency, performing loss causation analysis, and calculating damages in securities fraud cases.

5. My teaching and research deal mainly with corporate finance, investment banking, fixed income securities valuation, fixed income portfolio management, and the design and valuation of complex securities. My corporate finance and investment banking courses cover business valuation and securities valuation, among other topics. My corporate finance and fixed income courses cover derivative instruments and their use in designing and implementing investment and hedging strategies. I was inducted into the Fixed Income Analysts Society Hall of Fame in 2011.

6. I previously served as the Chair of the Trustees, President, and Director, and I am currently serving as a Trustee of the Eastern Finance Association, an academic finance organization. I am a former Director of the Financial Management Association. I have

served as the President and Director of the Fixed Income Analysts Society, an association of finance professionals based in New York City. I am a former editor of *Financial Management*, one of the leading academic finance journals, and a former editor of *FMA Online*. I am an associate editor of the *Journal of Applied Finance* and a member of the editorial boards of the *Journal of Portfolio Management* and the *International Journal of Portfolio Analysis & Management*.

7. I received a Ph.D. in Operations Research from the Naval Postgraduate School, an M.A. in Economics from Cambridge University, where I was a Marshall Scholar, and a B.A. in Mathematics from Williams College. Attached as Appendix A is a true and correct copy of my current resume, which lists all publications I have written or co-authored and includes a brief description of my trial and deposition testimony within at least the past four years.

8. AlixPartners is being compensated at a rate of $930 per hour for my work on this matter. My compensation is not contingent on my findings or on the outcome of this matter. I have been assisted in the preparation of this expert report by AlixPartners's staff working under my direction and supervision.

9. Attached as Appendix B is a list of the documents I considered in coming to my opinions in this matter.

II. Assignment

10. Boies, Schiller & Flexner LLP and Korein Tillery LLC, as counsel for Bruce S. Sherman ("Sherman" or the "Plaintiff") and as liaison counsel in the consolidated and coordinated opt-out actions in this matter, have asked me to perform the following tasks common to plaintiffs in the consolidated and coordinated opt-out actions: (1) conduct appropriate studies and opine on the efficiency of the market for the common stock of

The Bear Stearns Companies, Inc. ("Bear Stearns" or the "Company") during the period extending from December 14, 2006 through March 14, 2008, inclusive (the "Relevant Period"); and (2) perform a loss causation analysis and opine on whether the declines in the price of the common stock of Bear Stearns on the alleged disclosure dates were attributable to and substantially caused by identifiable news events relating to the disclosure of the fraud allegedly committed by Bear Stearns during the Relevant Period. Additionally, counsel has asked me to calculate the amount of damages sustained by Sherman due to the disclosure of the alleged fraud on each fraud disclosure date and also due to any information leakage regarding the alleged fraud during the Relevant Period.

III. Summary of Opinions

11. Based on my education, knowledge, and training in economics; my experience in performing market efficiency, loss causation, and damages analyses in connection with securities class action matters; and my review of the case documents, company documents, and other information relevant to this matter, I have reached the following opinions, after conducting appropriate studies, the results of which are described in this expert report:

    a. the market for the common stock of Bear Stearns was open, developed, and efficient during the Relevant Period;

    b. Bear Stearns' common stock price declined during the period between December 20, 2007 and March 13, 2008 (the "Leakage Period") when the truth regarding Bear Stearns leaked into the market, and also on March 14, 2008 and March 17, 2008 (the "Disclosure Dates" -- collectively with the Leakage Period the "Effective Disclosure Dates") immediately following the public revelation of previously undisclosed facts regarding Bear Stearns, and

those declines were statistically significant;

c. Bear Stearns' common stock price declines on the Effective Disclosure Dates were substantially caused by a series of revelations of the facts regarding Bear Stearns' risk management deficiencies and deteriorating financial condition, especially related to Bear Stearns' worsening liquidity situation;

d. the statistically significant abnormal returns on the Effective Disclosure Dates were not due to any macroeconomic factors, industry-specific factors, or non-fraud-related Bear Stearns news, but were substantially caused by revelations of the facts regarding Bear Stearns' risk management deficiencies and deteriorating financial condition, especially related to Bear Stearns' growing liquidity problems;

e. the economic loss suffered by Bruce S. Sherman as a result of the disclosure of the truth about Bear Stearns on the Effective Disclosure Dates is, in total, up to $78.45 per share before prejudgement interest; and

f. the aggregate damages for Mr. Sherman for the shares of Bear Stearns common stock he purchased during the Relevant Period amount to approximately $13,147,777 before prejudgment interest; including prejudgment interest from the date of purchase to the date of this expert report, Mr. Sherman's aggregate damages amount to approximately $21,833,155.

12. These opinions are based on the results of the market efficiency analysis, the loss causation analysis and the damages calculations that are described in this expert report.

IV. Factual Background

A. Overview of Bear Stearns' Business During the Relevant Period

13. Prior to its merger with JP Morgan Chase & Co. ("JPMorgan") in 2008, Bear Stearns was a holding company that operated through its numerous subsidiaries as a leading investment banking, securities and derivatives trading, securities clearance, and brokerage firm. Bear Stearns was the fifth largest U.S. investment bank during the Relevant Period. The Company was a leading originator of mortgage-backed and asset-backed securities in the market. Bear Stearns was highly leveraged with a large concentration of its assets in mortgage-backed securities.

14. During the Relevant Period, Bear Stearns' business was comprised of three business segments: (1) Capital Markets; (2) Global Clearing Services; and (3) Wealth Management. Capital Markets accounted for approximately 79% of total net revenues, Global Clearing Services accounted for 12%, and Wealth Management accounted for the remaining 9%.[1]

i. Capital Markets

15. Bear Stearns' Capital Markets business segment consisted of its Institutional Equities, Fixed Income, and Investment Banking businesses. Institutional Equities accounted for approximately 27% of total net revenues in the Capital Markets segment, Fixed Income accounted for 57%, and Investment Banking accounted for the remaining 16%.[2]

16. The Institutional Equities segment provided stock sales, trading, and research covering domestic and international equities, blocks of stock, over-the-counter equities, equity derivatives, energy and commodities, risk arbitrage, and convertible arbitrage.

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[1] Bear Stearns, Form 10-K for the fiscal year ending November 30, 2007, filed on January 29, 2008, p. 124.
[2] *Id.*, p. 41.

17. The Fixed Income segment engaged in sales, trading, securities origination, and bond research for institutional clients involving a variety of fixed income products, such as mortgage-backed and asset-backed securities, corporate and government bonds, municipal bonds, and high-yield bonds.

18. The Investment Banking segment provided securities underwriting and other capital raising services, strategic advice, and merger and acquisition advice and transaction assistance mainly to corporate clients and also engaged in merchant banking activities.

ii. Global Clearing Services

19. Bear Stearns' Global Clearing Services business segment provided trade execution, securities clearing services, margin lending, and securities borrowing. Global Clearing Services had a worldwide client base comprised of hedge funds, other broker-dealers, and investment advisors.

iii. Wealth Management

20. Bear Stearns' Wealth Management business segment included Private Client Services and Asset Management. The Private Client Services segment provided high-net-worth individuals with institutional-level investment services. The Asset Management segment managed portfolios comprised of equities, fixed income instruments, and alternative investments for corporate pension plans, public system pension plans, endowments, foundations, insurance companies, corporations, and high-net-worth individuals. As of November 30, 2007, Wealth Management had $42.7 billion of assets under management.[3]

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[3] *Id.*, page 10.

B. Bear Stearns' Financial Performance During the Relevant Period

21. This section briefly reviews Bear Stearns' financial performance during the Relevant Period. I also present a brief description of economic events during this period. This overview provides background information concerning the overall market environment at the time of the alleged fraud, discusses Bear Stearns' financial condition and operating performance during the Relevant Period, and explains how Bear Stearns' risk management practices and financial policies created a vulnerability to the effects of the deterioration in the financial markets over the period.

22. The Relevant Period, which extended from December 14, 2006 through March 14, 2008, encompassed the start of a tumultuous period for the global economy.[4] From January 2007 to April 2008, the United States' real Gross Domestic Product (GDP) increased approximately 1.6%. (*See* Attachment 1.) However, beginning in December 2007, the United States entered a recession.

23. The S&P Case-Shiller U.S. National Home Price Index[5] shows that the United States' home prices steadily increased approximately 30% from the beginning of 2004 to the beginning of 2006, and home prices peaked in early-2006. (*See* Attachment 2.) Housing prices then started decreasing, and the housing bubble burst. Since the beginning of

[4] A Congressional Commission created to investigate the causes of the 2007-2008 financial crisis found that "by the fall of 2007, signs of strain were beginning to emerge among the commercial banks. In the fourth quarter of 2007, commercial banks' earnings declined to a 16-year low, driven by write-downs on mortgage-backed securities and CDOs and by record provisions for future loan losses, as borrowers had increasing difficulty meeting their mortgage payments—and even greater difficulty was anticipated. The net charge-off rate—the ratio of failed loans to total loans—rose to its highest level since 2002, when the economy was coming out of the post 9/11 recession." *See* The Financial Crisis Inquiry Commission, "The Financial Crisis Inquiry Report: Final Report of the National Commission on the Causes of the Financial and Economic Crisis in the United States," January 2011, page 301.

[5] The S&P Case-Shiller U.S. National Home Price Index is a composite of single-family home price indices for the nine United States Census divisions and is calculated monthly.

2006, the United States' home prices thereafter declined precipitously across the United States, declining by 19% by April 1, 2008.

24. Interest rates increased starting in 2004 and continuing through mid-2006. The 30-year fixed-rate mortgage rate steadily increased from 5.4% in early-March 2004 to 6.8% in early-July 2006. (*See* Attachment 3.) Thereafter, 30-year mortgage rate became more volatile for the remainder of the Relevant Period. The 30-year mortgage rate was at 6.12% in December 2006, reached a high of 6.74% in mid-2007, and dropped to a low of 5.48% in January 2008 before increasing again. The 15-year fixed-rate mortgage rate exhibited a similar pattern.

25. Sales of both existing homes and new homes declined sharply in 2007. (*See* Attachments 4 and 5.) During the Relevant Period, in the United States, the number of existing homes sold per month decreased from 6,420,000 in December 2006 to 4,160,000 in March 2008, and the number of new single-family homes sold per month decreased from 71,000 to 49,000.

26. As a result of these economic issues, refinancing became more difficult, and there was a sharp increase in mortgage delinquencies, especially among subprime mortgages.[6] During the Relevant Period, delinquency rates on single-family residential mortgages, originated in domestic offices, more than doubled, from approximately 2% to 4.4%. (*See* Attachment 6.) As the rate of mortgage delinquencies increased, assets whose value depended on the value of mortgages (e.g., mortgage-backed securities, collateralized

[6] Subprime mortgages refer to mortgages made to borrowers with lower credit ratings and higher risk of default. According to the Office of Thrift Supervision, U.S. Department of the Treasury, borrowers having a FICO scores below 620 are considered as subprime borrowers. *See* Office of Thrift Supervision, U.S. Department of the Treasury, "OCC and OTS Mortgage Metrics Report," December 2008, page 9.

mortgage obligations, and collateralized debt obligations) declined significantly in value due to the increased credit risk and the lack of transparency in these products.

27. As a result of exposure to mortgages or mortgage-backed assets, numerous firms and institutional investment funds experienced operating and financial difficulties. Two Bear Stearns-sponsored hedge funds, the "Bear Stearns High-Grade Structured Credit Fund" and the "Bear Stearns High-Grade Structured Credit Enhanced Leverage Fund," (together, the "Bear Stearns Hedge Funds") were heavily invested in collateralized debt obligations ("CDOs"), which involved exposures to mortgages and mortgage-backed assets. These funds collapsed in June 2007.[7]

28. The deterioration in the housing sector caused stock prices to fall beginning in mid-2007. (*See* Attachment 7.) The decline in economic activity also adversely affected the financial sector, as shown in the chart for the S&P financial services index (S5INBK Index). (*See* Attachment 7.) I use this industry index as the basis for my regression model, for the period between the beginning of 2004 and the end of 2008.

29. Subsequently, the credit markets in the United States tightened, as financial institutions imposed more stringent lending standards. The mortgage crisis intensified, and, beginning in December 2007, the country entered a severe recession.[8]

30. Bear Stearns experienced rapid growth in revenues and net income during the period 2002-2007. Total revenues grew at a compounded annual growth rate of 19% during that period. Revenues net of interest expense grew at a compounded annual growth rate of 16% from 2002 to 2006 but declined 36% in 2007. (*See* Attachment 8.) Total assets

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[7] Bloomberg News, "Bear Stearns Warns Hedge Fund Investors of Total Loss (Update1)," July 17, 2007; Associated Press, "AFX: Bear Stearns Says Hedge Fund Worthless," July 17, 2007.

[8] According to the National Bureau of Economic Research, the U.S. recession lasted from December 1, 2007 to June 1, 2009. *See* http://research.stlouisfed.org/fred2/help-faq/#graph_recessions.

grew at a compounded annual growth rate of 16% from 2002 to 2007, including a growth rate of 13% in 2007. Net income grew at a compounded annual growth rate of 24% between 2002 and 2006 before declining 89% in 2007 from a year earlier. Attachment 10 illustrates the year-to-year variability in total revenues and revenues net of interest expense. Attachment 11 shows the year-to-year variability in pre-tax operating income and net income.

31. Bear Stearns, like all investment banks, traditionally relied on a mix of, among other funding sources, unsecured financing (where financing is not backed by collateral but is only supported by the borrower's creditworthiness) and repurchase financing (where a company sells a security with an agreement to repurchase it, usually on a short-term basis, as collateral for a financing transaction). Between 2002 and 2007, Bear Stearns' financing mix changed dramatically. (*See* Attachments 8 and 9.) Bear Stearns became increasingly reliant on repurchase financing between 2002 and 2007. Securities sold under repurchase agreements grew at a compounded annual growth rate of 18% per year, increasing 47% in 2007 from 2006 alone. By the end of 2007, the Company relied primarily on repurchase financing to fund its operations; at that point Bear Stearns was taking in almost nine times more funds through repurchase financing than it was through unsecured short-term borrowing.

32. Bear Stearns also became more reliant on customer payables for funding, which were primarily repayable on demand. Bear Stearns' customer payables grew at a compounded annual growth rate of 9% per year, increasing 14% in 2007 from 2006 alone. Attachment 9 illustrates the year-to-year variability in securities sold under repurchase agreements and customer payables. The significant increase in customer payables put an

additional cash burden on Bear Stearns when its prime brokerage clients made a 'run on the bank.'

33. Bear Stearns' total liabilities (which include, among other things, account payables, accrued expenses, short-term borrowings, long-term debt, and trust preferred securities) grew at a compounded annual growth rate of 17% per year between 2002 and 2007 while shareholders' equity grew at a compounded annual growth rate of 13%. Total liabilities were 33 times shareholders' equity at the end of 2007. Attachment 12 provides the year-to-year variability in total liabilities and shareholders' equity.

34. Bear Stearns' financial results deteriorated in 2007 and Bear Stearns reported the first quarterly loss in its history for the fourth quarter of 2007. Bear Stearns' firm-wide net revenues for fiscal year 2007 decreased 36% year-over-year.[9] The Fixed Income segment experienced the largest decline, a decrease of 84% in net revenue.[10] The Company's pre-tax income also declined 94% over the same period.[11]

C. The Collapse of Bear Stearns

35. During the week of March 10, 2008, rumors swirled in the capital market regarding the strained liquidity and questionable capital adequacy of Bear Stearns. On March 14, 2008, Bear Stearns obtained emergency funding from JPMorgan to support the Company's liquidity needs, while Bear Stearns worked on obtaining alternative forms of financing. As a result, Bear Stearns' common stock price closed at $30.00 per share on March 14, 2008, a 47% drop from the prior's day closing price of $57.00.[12] (*See*

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[9] Bear Stearns, Form 10-K for the fiscal year ending November 30, 2007, filed on January 29, 2008, Exhibit 13, page 36.
[10] *Id.*, page 41.
[11] *Id.*, page 36.
[12] Bear Stearns' highest closing price for its common stock during the Relevant Period was $171.51 on January 12, 2007.

Attachment 13.) On March 16, 2008, Bear Stearns announced that it had entered into an agreement to be acquired by JPMorgan for $2.00 per share. Bear Stearns' stock closed at $4.81 on March 17, 2008. (*See* Attachment 13.) The Company eventually merged with JPMorgan at a price of $10.00 per share as a result of the merger renegotiation that took place after the initial agreement.[13]

V. Efficiency of the Market for Bear Stearns' Common Stock

36. An efficient market is one in which "security prices fully reflect all available information."[14] Stock price movements take place only after someone, on the basis of new information, is able to better assess the value of the asset.[15] There are three versions of the Efficient Market Hypothesis ("EMH").[16] The weak form of the EMH states that stock prices reflect all information contained in past trading in the market. The semi-strong form of the EMH holds that stock prices reflect all publicly available information. This is the form of the EMH adopted by the Supreme Court in _Basic_.[17] The strong form of the EMH states that stock prices reflect all public and private information. There is little evidence that the strong form of the EMH holds, and it would be surprising if insiders with possession of material non-public information could not earn abnormal trading profits.[18]

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[13] The price of $10.00 per share was determined on March 24, 2008.

[14] Elton, Edwin J., Martin J. Gruber, Stephen J. Brown, and William N. Goetzmann, Modern Portfolio Theory and Investment Analysis, 6th ed., John Wiley & Sons, Inc., Hoboken, NJ, 2003, page 402.

[15] Emery, Douglas R., John D. Finnerty, and John D. Stowe, Corporate Financial Management, 4th ed., Wohl Publishing, Morristown, NJ, 2011, page 452.

[16] Fama, Eugene, "Efficient Capital Markets: A Review of Theory and Empirical Work," *Journal of Finance*, 25, March 1970, pages 383-417.

[17] *Basic Inc. v. Levinson*,, 485 U.S. 224 (1988).

[18] Jaffe, Jeffrey, "Special Information and Insider Trading," *Journal of Business*, 47, July 1974, pages 410-428, and Lorie, James, and Victor Niederhoffer, "Predictive and Statistical Properties of Insider Trading," *Journal of Law and Economics*, 11, April 1968, pages 91-103.

37. The focus of my analysis is on the semi-strong form of the EMH, which is the most widely accepted characterization of what is meant by an "efficient market" in the securities industry and in academia. If a security's price reflects all public information, an investor can rely on it as the market's consensus of the security's fair value. Judge Alfred J. Lechner, Jr., in Cammer v. Bloom,[19] cited commentators Bromberg and Lowenfels[20] ("Bromberg") in defining certain key terms related to market efficiency in the context of a stock traded other than on the New York Stock Exchange where trading is subject to overall capitalization requirements and other indicia suggesting market efficiency:

- An open market is one in which anyone, or at least a large number of persons, can buy or sell.
- A developed market is one which has a relatively high level of activity and frequency, and for which trading information (e.g., price and volume) is widely available. It is principally a secondary market in outstanding securities. It usually, but not necessarily, has continuity and liquidity (the ability to absorb a reasonable amount of trading with relatively small price changes).
- An efficient market is one which rapidly and accurately reflects new information in the security's price.

[19] Cammer v. Bloom, 711 F. Supp. 1264 (D.N.J. 1989). This decision is widely considered the definitive legal authority on the issue of the efficiency of the market for a company's stock. *See, e.g., Teamsters Local 445 Freight Div. v. Bombardier*, 546 F. 3d 196, 204 n. 11(2d Cir. 2008); *Billhofer v. Flamel Technologies, S.A.*, 281 F.R.D. 150, 159 (S.D.N.Y. 2012) (Sweet J.) (applying the *Cammer* factors when assessing market efficiency); The Harvard Law School Forum on Corporate Governance and Financial regulation, "Do Courts Count Cammer Factors," August 23, 2012.

[20] *Id.* at 1276 (citing Bromberg and Lowenfels, 4 Securities Fraud and Commodities Fraud, § 8.6, August 1988).

These terms are cumulative in the sense that a developed market will almost always be an open one, and an efficient market will almost invariably be a developed one.[21]

38. The Cammer court described five factors which should be considered in determining whether a market for a specific security is efficient:

   a. the stock's average weekly trading volume;

   b. the number of securities analysts who follow and report on the stock;

   c. the presence of market makers, institutional investors, and arbitrageurs;

   d. the company's eligibility to file a Form S-3 Registration Statement; and

   e. a cause-and-effect relationship, over time, between unexpected corporate events or financial news releases and an immediate response in stock price.[22]

39. It is my opinion that the Cammer factors are consistent with the economics literature and that they provide valuable insight into whether the market for a security is efficient.[23] Cammer Factor Five (a cause-and-effect relationship, over time, between unexpected corporate events or financial news releases and an immediate response in stock price) is especially important because it relates directly to the definition of an efficient market. I examined each of these factors for the market for Bear Stearns' common stock during the Relevant Period.

40. In addition to the five Cammer factors, I also applied the three Elmer Krogman factors to examine further the efficiency of the market for Bear Stearns' common stock during the Relevant Period.[24] The Elmer Krogman tests, along with the Cammer factors, provide additional insight regarding the efficiency of the market for Bear Stearns' common

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[21] *Id.*

[22] Cammer, at 1286-1287.

[23] Barber, Brad M., Paul A. Griffin, and Baruch Lev, "The Fraud-on-the-Market Theory and the Indicators of Common Stocks' Efficiency," *Journal of Corporation Law*, 19, Winter 1994, pages 285-312.

[24] *Krogman v. Sterritt*, 202 F.R.D. 467 (N.D. Tex. 2001).

stock. The Elmer Krogman tests are also often cited as an additional set of factors that can be used to test for market efficiency.[25]

41. Additionally, I analyzed whether put-call parity held throughout the Relevant Period and tested whether the price of Bear Stearns' common stock followed a random walk during the Relevant Period. Put-call parity is a mathematical relationship between the price of a company's common stock and the prices of its call and put options, which holds when all those instruments are accurately priced. Put-call parity should hold, at least to a close approximation, and Bear Stearns' stock price movements should follow a random walk if the market for Bear Stearns' common stock is efficient. The random walk model suggests that, in an efficient market, stock price movements are independent and the returns on the stock are identically distributed over time.[26]

42. The Elmer Krogman tests, the put-call parity tests, and the random walk tests, taken in conjunction with the Cammer factor tests, collectively facilitate a thorough assessment of whether the market for Bear Stearns' common stock was efficient during the Relevant Period.

A. Application of the Cammer Factors to the Market for Bear Stearns' Common Stock

i. Cammer Factor One: Weekly Trading Volume

43. High trading volume is indicative of an efficient market. As stated in Cammer:

> The reason the existence of an actively traded market, as evidenced by a large weekly volume of stock trades, suggests there is an efficient market is because it implies significant investor interest in the company. Such interest, in turn, implies

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[25] Cornell, Bradford and James C. Rutten, "Market Efficiency, Crashes, and Securities Litigation," *Tulane Law Review*, 81, December 2006, pages 443-471.

[26] Elton, Edwin J., Martin J. Gruber, Stephen J. Brown, and William N. Goetzmann, Modern Portfolio Theory and Investment Analysis, 6th ed., John Wiley & Sons, Inc., Hoboken, NJ, 2003, page 405.

a likelihood that many investors are executing trades on the basis of newly available or disseminated corporate information.[27]

44. "Turnover measured by average weekly trading of 2% or more of the outstanding shares would justify a strong presumption that the market for the security is an efficient one; 1% would justify a substantial presumption."[28]

45. During the Relevant Period, Bear Stearns' common stock was listed on the NYSE. The average weekly reported trading volume for Bear Stearns' common stock was 30,058,989 shares. (*See* Attachments 13 and 14.) Bear Stearns' weekly trading volume averaged 25.66% of shares outstanding, which provides a strong presumption of a liquid and efficient market. In addition, the examination of weekly historical turnover ratios indicates that the volume of trading was large enough each week during the Relevant Period to support an efficient market for Bear Stearns' common stock.

46. The annualized turnover ratio is the annual reported trading volume divided by the number of shares outstanding. A total of 1,959,586,657 Bear Stearns shares traded during the Relevant Period, and the average number of Bear Stearns shares outstanding during the Relevant Period was 117,435,702 shares. Since the Relevant Period spans 1.25 years, the annualized turnover ratio was 1333.94%. (*See* Attachment 14.) In comparison, the average annualized turnover ratio for NYSE-listed common stocks was 125.1% between December 2006 and March 2008.[29] (*See* Attachment 15.) Bear Stearns' high turnover ratio, which greatly exceeds the NYSE average, further justifies a strong presumption that the market for Bear Stearns' common stock was efficient during

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[27] Cammer at 1286.
[28] *Id.* at 1286, citing Bromberg, et al.
[29] NYSEData.com Factbook.

the Relevant Period according to the Bromberg and Lowenfels criteria, as articulated by the Cammer court.

ii. Cammer Factor Two: Stock Analyst Coverage

47. Securities analysts play a critical role in promoting the efficiency of the securities markets. Analysts devote substantial amounts of time and resources to collecting and assessing information regarding the companies they follow. Their ability to provide sophisticated analysis and convey new information and their conclusions as to its implications for investors in the market for a stock improves the speed and accuracy with which market prices adjust to reflect new information. Within twenty-four hours of a company's earnings release, many stock analysts in an efficient market will have disseminated in-depth research reports.

48. During the Relevant Period, at least 23 securities firms had stock analysts that covered the Company and its common stock.[30] Twelve more securities firms and rating firms had credit analysts who covered the Company and its debt. (*See* Attachment 16.) Bernstein Research, Credit Suisse, Deutsche Bank Securities Inc., Fitch Ratings, Goldman Sachs Group, Inc., Lehman Brothers, Merrill Lynch, Oppenheimer & Co., Piper Jaffray Companies, UBS Investment Bank, and Wachovia Capital Markets, LLC are some of the firms that had analysts who followed Bear Stearns.

49. The regular availability of stock analyst research reports from leading broker-dealers who covered Bear Stearns during the Relevant Period, which was supplemented by the availability of regular research reports from the major rating agencies and other firms

[30] Based on the actual stock analyst and rating agency reports issued during the Relevant Period and obtained through Investext, Capital IQ, and Bloomberg L.P., the analysts reported as attending Bear Stearns securities analyst conference calls, and analysts quoted in news stories about the performance of Bear Stearns.

that reported on Bear Stearns' credit quality, is evidence that the market for Bear Stearns' common stock was efficient during the Relevant Period.

50. In addition, Bear Stearns issued regular press releases during the Relevant Period, made regular securities filings with the Securities and Exchange Commission ("SEC"), and held regular analyst conference calls. Bear Stearns also received regular press coverage throughout the Relevant Period, and information concerning Bear Stearns was widely disseminated throughout the Relevant Period through Bloomberg and other national news services.

iii. <u>Cammer</u> Factor Three: Existence of Market Makers, Institutional Investors, and Arbitrageurs

51. Bear Stearns' common stock was listed on the NYSE during the entire Relevant Period. During this period, numerous financial entities were actively buying and selling Bear Stearns' common stock. As disclosed in Schedule 13-F filings, shares representing between 70% and 93% (or more) of Bear Stearns' shares outstanding were held by institutional investors during the Relevant Period.[31] (*See* Attachment 17.) These institutions actively adjusted their holdings of Bear Stearns' common stock. The sum of the absolute values of the quarterly changes in securities held by each individual institutional shareholder ranged from 17.1 million shares to 118.8 million shares during the Relevant Period. Schedule 13-F filings report the holdings of institutional investors on one day in each calendar quarter, and quarter-to-quarter changes in share holdings can significantly understate the total volume of trading by these institutional shareholders by failing to account for instances where institutional shareholders bought

[31] Thomson Reuters and Bear Stearns Forms 10-K and 10-Q.

and sold shares during the respective quarters. Thus, my estimation of the volume of institutional trading in Bear Stearns' common stock is conservative. High levels of institutional ownership and the active trading by these holders are further evidence that is consistent with the market for Bear Stearns' common stock being efficient during the Relevant Period.

52. There is evidence that numerous financial entities were actively buying and trading Bear Stearns' common stock during the Relevant Period. According to Bloomberg, there were 46 active market makers for Bear Stearns' common stock between December 2006 and March 2008 with trading volumes in excess of one million shares.[32] (*See* Attachment 18.) The large number of market makers facilitating trading in Bear Stearns' common stock during the Relevant Period is indicative of a liquid and efficient market for Bear Stearns' common stock during this period.

iv. Cammer Factor Four: Bear Stearns' Eligibility to File SEC Form S-3

53. The Securities Act of 1933 requires companies to file registration statements prior to the sale of securities to the public. Form S-3 is a simplified form that allows incorporation by reference of Securities Exchange Act of 1934 (the "Exchange Act") reports.[33] Form S-3 is available to large, seasoned companies. However, I note that an amendment to the eligibility requirements for Form S-3, which was effective January 28, 2008, now allows for smaller companies to file on Form S-3. [34]

54. The primary requirements for S-3 eligibility are that the issuer must have filed all materials required under the Exchange Act for at least twelve months and that the public

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[32] Bloomberg L.P. Bloomberg's list of market makers includes 217 entities, although some reported very low trading volumes.
[33] *See* http://www.sec.gov/about/forms/forms-3.pdf.
[34] Securities and Exchange Commission, "Revisions to the Eligibility Requirements for Primary Securities Offerings on Forms S-3 and F-3," Release No. 33-8878; File No. S7-10-07, December 2007.

float of the company's common equity must be $75 million or greater. As stated in the SEC release establishing the requirements for S-3 eligibility, "This form is predicated on the Commission's belief that the market operates efficiently for these companies, i.e., that the disclosure in Exchange Act reports and other communications by the registrant, such as press releases, has already been disseminated and accounted for by the market place."[35]

55. Bear Stearns was eligible to file on Form S-3 throughout the Relevant Period because its shares were listed on the NYSE throughout the Relevant Period.

v. Cammer Factor Five: The Relationship between News Events and Security Price Changes

56. In evaluating market efficiency, perhaps the most reliable test of market efficiency comes from Cammer Factor Five, the relationship between news events and securities price changes, because it ties directly to the definition of an efficient market. An efficient market will react quickly to new information that is economically significant. I examined the responsiveness of Bear Stearns' common stock price to material news events to test whether the market for Bear Stearns' common stock was efficient during the Relevant Period. I performed an event study to investigate this relationship between changes in Bear Stearns' common stock price and news events concerning Bear Stearns.

57. An event study is a standard statistical technique that financial economists use to determine whether a security's price reaction to a news announcement (or some other event) is statistically significant. It is consequently the standard analytical technique that financial economists use to assess the stock market's responsiveness to new information

[35] *See* Cammer, at 1284-1285 citing SEC Securities Act Release No. 6331, 46 Red. Reg. 41,902, reprinted in Fed. Sec. L. Rep. (CCH) Spec. Regs. No. 926, extra ed. (Aug. 13, 1981).

when testing for market efficiency. The new information is the 'event', and the one-day change in the issuing company's common stock price the day the information is released into the market (or the next trading day if the information is disclosed publicly while the market is closed) indicates the stock market's assessment of the information's significance. The stock market's reaction is consistent with market efficiency when the actual reaction to the new information conforms to the reaction one would expect on the basis of economic theory.

58. The event study analyzes the daily total return on Bear Stearns' common stock, which is the daily percentage change in the price of a share, adjusted for any dividend distributions. In order to focus on the impact of the company-specific news on the price of a security, one calculates a security's abnormal return around the time of the announcement. A security's abnormal return is the difference between the security's actual return and its expected return. A security's expected return is the return one would expect based on general stock market price movements and industry-related factors that are unrelated to the specific event that is being examined, as reflected in the changes in the prices of stocks of firms in the same industry. Once one has calculated a security's abnormal returns, one can use standard statistical tests to determine whether these abnormal returns are statistically significant.

59. I calculated the expected return on Bear Stearns' common stock by applying the widely accepted *Fama-French Three-Factor Model*.[36] Eugene Fama and Kenneth French developed what is now known as the *Fama-French Three-Factor Model* in 1993.[37] The *Fama-French Three-Factor Model* expresses the excess return on a common stock on

[36] Fama, Eugene F., and Kenneth R. French, "Common Risk Factors in the Returns on Stocks and Bonds," *Journal of Financial Economics*, 33, 1993, pages 3-56.
[37] *Id.*

day t (R_t) over the return on Treasury bills that day (R_F) in terms of three key factors. The return on Treasury bills represents the return one would expect on a risk-free investment. This model "has become widely known and adapted."[38] The model identifies the following three factors that explain excess stock returns:

- $(R_m - R_F)$ – the excess return on the equity market portfolio (R_m) over the return on Treasury bills (R_F);[39]
- SMB ("small minus big") – the difference between the returns on small-capitalization stocks and the returns on large-capitalization stocks; and
- HML ("high minus low") – the difference between the returns on high book-to-market stocks (commonly known as value stocks) and the returns on low book-to-market stocks (commonly known as growth stocks).

60. The regression formula for the *Fama-French Three-Factor Model*, which is fitted to daily data, is:

$$R_t - R_F = \alpha + \beta(R_m - R_F) + s(SMB) + h(HML) + \epsilon \qquad \textit{(Equation 1)}$$

61. The variables $R_m - R_F$, SMB, and HML are defined above. The coefficients β, s, and h measure the contributions of the respective factors to the excess return on the stock, $R_t - R_F$. A positive coefficient suggests a direct relationship between the factor and the return on the analyzed stock. The larger the coefficient, the more responsive the stock's return will be to that factor on any given day. The *Fama-French Three-Factor Model* has become widely accepted for event study analysis.[40] It is a significant improvement

[38] Emery, Douglas R., John D. Finnerty, and John D. Stowe, Corporate Financial Management, 4th ed., Wohl Publishing, Morristown, NJ, 2011, page 191.
[39] The equity market portfolio return, R_m, represents the value-weighted return on all NYSE, AMEX and NASDAQ stocks.
[40] *See, e.g.*, Boehme, Rodney D., and Sorin M. Sorescu, "The Long-run Performance Following Dividend Initiations and Resumptions: Underreaction or Product of Change," *Journal of Finance*, 57, 2002, pages 871-

over the (unadjusted) Capital Asset Pricing Model ("CAPM") because it prices the risks associated with small firm size and financial distress.[41]

62. Morningstar's *Cost of Capital Yearbook*, which has been widely relied upon for historical rate of return data in the investment management industry, uses the *Fama-French Three-Factor Model*, among other models, to calculate the cost of equity capital for firms in various industries.[42] The Morningstar *Cost of Capital Yearbook* was discontinued after 2013 and replaced by the Duff & Phelps *Valuation Handbook*, which also employs the *Fama-French Three-Factor Model*, among other models, to calculate the cost of capital.[43]

63. Controlling for industry factors that can affect the price of a company's stock is appropriate in an event study, as several articles in the academic and professional literature have previously noted.[44] Indeed, academic research has pointed out the importance of making sure that estimates of returns to investors on securities are free of the bias that can occur with the omission of an explanatory factor when using a market model, such as the CAPM or the *Fama-French Three-Factor Model*, to conduct an

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900, and Ang, James S., and Shaojun Zhang, "An Evaluation of Testing Procedures for Long Horizon Event Studies," *Review of Quantitative Finance and Accounting*, 23, 2004, pages 251-274. Eugene Fama also won the Nobel Prize in Economics in 2013. "Eugene F. Fama – Facts," Nobelprize.org. Nobel Media AB 2014. Available at http://www.nobelprize.org/nobel_prizes/economic-sciences/laureates/2013/fama-facts.html.

[41] Emery, Douglas R., John D. Finnerty, and John D. Stowe, Corporate Financial Management, 4th ed., Wohl Publishing, Morristown, NJ, 2011, page 192.

[42] Morningstar, Cost of Capital 2013 Yearbook, 2013, page 12.

[43] Duff & Phelps, 2014 Valuation Handbook, Industry Cost of Capital, page 6.

[44] Tabak, David I., and Frederick C. Dunbar, "Materiality and Magnitude: Event Studies in the Courtroom," in Roman L. Weil, Michael J. Wagner, and Peter B. Frank, eds., Litigation Services Handbook, 3rd ed., Wiley, New York, 2001, chapter 19. *See also* Alexander, Janet C., "The Value of Bad News," *UCLA Law Review*, 41, August, 1994, pages 1421-69; Macey, Jonathan R., Geoffrey P. Miller, Mark L. Mitchell, and Jeffry M. Netter, "Lessons from Financial Economics: Materiality, Reliance, and Extending the Reach of Basic v. Levinson," 77 *Virginia Law Review Association*, 1017, August 1991, pages 1021-28; MacKinlay, A. Craig, "Event Studies in Economics and Finance," *Journal of Economic Literature*, 35, March 1997, pages 13-39; Mitchell, Mark L., and Jeffry M. Netter, "The Role of Financial Economics in Securities Fraud Cases: Applications at the Securities and Exchange Commission," *The Business Lawyer*, 49, February 1994, pages 545-90; and Cornell, Bradford, and R. Gregory Morgan, "Using Finance Theory to Measure Damages in Fraud on the Market Cases," *UCLA Law Review*, 37, June 1990, pages 883-923.

empirical study.[45]

64. I modified the *Fama-French Three-Factor Model* to include the returns on an industry index of common stocks that are comparable to Bear Stearns to take into account the sensitivity of Bear Stearns' common stock price to movements in the comparable companies' common stock prices during the Relevant Period. The regression formula for my *Modified Fama-French Three-Factor Model* is:

$$R_t - R_F = \alpha + \beta(R_m - R_F) + s(SMB) + h(HML) + i(Industry\ Index) \qquad (Equation\ 2)$$

65. $Industry\ Index$ represents the return on a market-weighted custom index comprised of members of the Standard & Poor's 500 Investment Banking & Brokerage Index ("S5INBK Index"), excluding Bear Stearns.[46] The six members include Goldman Sachs Group, Inc., Lehman Brothers Holdings Inc., Merrill Lynch & Co., Morgan Stanley, E-Trade Financial Corp., and Charles Schwab Corporation.[47] The coefficient i measures the contribution of industry-wide factors, as measured by the daily percentage change in the $Industry\ Index$, to the daily excess returns on Bear Stearns' common stock.

66. I fitted the Modified *Fama-French Three-Factor Model* to the daily returns on Bear Stearns' common stock during the one-year comparison period extending from December 14, 2005 through December 13, 2006 to estimate the five parameters of the model, α, β, s, h, and i in Equation 2. Using a one-year comparison period that pre-dates

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[45] Bartholdy, Jan, and Paula Peare, "Unbiased Estimation of Expected Return Using CAPM," *International Review of Financial Analysis*, 2003, pages 69-81. The article specifically mentions the CAPM but its analysis applies equally to the *Fama-French Three-Factor Model* because that model is really just an extended version of the CAPM. *See* Brealey, Richard A., Stewart C. Myers, and Franklin Allen, Principles of Corporate Finance, 9th ed., McGraw-Hill, New York, 2008, pages 225-227.

[46] Bear Stearns was a member of the S5INBK Index during the Relevant Period. I excluded Bear Stearns from the custom index to avoid any bias in the industry returns.

[47] Three members of the S5INBK Index dropped out of the index (including Bear Stearns) and no additional members were added during the Relevant Period. On September 15, 2008, Lehman Brothers Holding Inc. filed for bankruptcy. On January 2, 2009, Merrill Lynch & Co. Inc. was effectively acquired by Bank of America Corp. The returns on the S5INBK Index were adjusted accordingly.

the Relevant Period is a standard technique in securities fraud event studies.

67. I then applied the *Modified Fama-French Three-Factor Model* for every day in the Relevant Period to test whether the stock market's reactions to Bear Stearns' daily news events were statistically significant during the Relevant Period. (*See* Attachment 19.) In each case, I used a two-tailed test of statistical significance to test whether the daily abnormal return on Bear Stearns' common stock is zero (the null hypothesis) against the alternative hypothesis that the daily abnormal return is different from zero (the alternative hypothesis).[48]

68. I report the results of the statistical testing in Attachment 19. I distinguish when the abnormal stock return is significantly different from zero at the 1% significance level (highly statistically significant), 5% level (statistically significant), or 10% level (weakly statistically significant), which is also consistent with the general practice within the field of financial economics. Academic articles in the financial economics literature typically cite all three levels of statistical significance but place the most weight on statistical results that are significant at the 1% level, less weight on those that are significant at the 5% level, and even less weight on those that are only significant at the 10% level. (*See* Attachment 20.)

69. I identified news items relevant to Bear Stearns during the Relevant Period to examine the cause-and-effect relationship between news events and the responsiveness of Bear Stearns' common stock price. I selected a set of Bear Stearns-related news announcements that I believed to be economically significant. These news

[48] The two-tailed test is conservative because I would normally expect that a corrective disclosure would elicit a negative stock market reaction, in which case the alternative hypothesis is that the abnormal stock market return is less than zero and a one-tailed test would seem more appropriate. Thus, the two-tailed test with a 10% critical significance level is equivalent to a one-tailed test with a more conservative 5% critical significance level.

announcements include many of the most important company news items. I then tested Bear Stearns' stock price reaction on each news announcement date for statistical significance.

70. During the Relevant Period, I identified several dates where I found a statistically significant cause-and-effect relationship between economically significant news events and an immediate response in Bear Stearns' common stock price, which is consistent with an efficient market for Bear Stearns' common stock. I describe below the reaction of Bear Stearns' stock price to a selected sample of news announcements concerning Bear Stearns during the Relevant Period, which illustrate this cause-and-effect relationship.

a. August 16, 2007

71. During the day on Thursday, August 16, 2007, Punk Ziegel & Company issued an analyst report and commented on the upward movement of Bear Stearns' stock price by stating that Bear Stearns "may have gotten new equity funding."[49] Punk Ziegel & Company speculated that Bear Stearns might sell a stake of up to 20 percent and noted that Bear Stearns had been talking to Chinese banks.[50] After the announcement regarding the possibility that Bear Stearns may have received new equity funding, there was additional news regarding Bear Stearns' cutting 240 jobs at its mortgage lending operations.[51] By the time this information entered the market, Bear Stearns' stock price had already increased by 8.8%.[52] The news regarding the potential new private equity investment would suggest that sophisticated private investors were satisfied with Bear

[49] Bloomberg L.P., "BSC: Bear Stearns' Stock Movement Suggests the Possibility of New Funding," August 16, 2007, and Bloomberg L.P., "Bear Stearns Rallies Most Since 2001 on Investment Speculation," August 16, 2007.
[50] *Id.*
[51] Bloomberg L.P., "Bear Stearns to Cut 240 Jobs at Mortgage Lending Ops, Dow Says," August 16, 2007.
[52] Bloomberg L.P., "Bear Stearns Rallies Most Since 2001 on Investment Speculation," August 16, 2007.

Stearns' prospects, which provides their implicit certification of Bear Stearns. The news concerning the cutting of jobs in the mortgage unit would suggest a reduction in operating costs, which should enhance Bear Stearns' profitability. Both announcements would be regarded as positive news.

72. I have reviewed the media databases on Bloomberg, Thomson Research, and other news sources for Bear Stearns-related news articles published after the market close on August 15, 2007 through the market close on August 16, 2007. I did not find any additional notable news items regarding Bear Stearns that received any news coverage that day. Based on the economically significant announcements regarding Bear Stearns' potential agreement to secure additional private equity funding and the reduction of jobs in its mortgage lending operations, I expect Bear Stearns' common stock price to increase. In fact, Bear Stearns' common stock price increased 12.88% on August 16, 2007. (*See* Attachment 19.)

73. In order to calculate the abnormal return on Bear Stearns' common stock, I applied the *Modified Fama-French Three-Factor Model*, including the percentage change in the *Industry Index* as an explanatory variable. On August 16, 2007, the abnormal return resulting from the news announcements was 8.87%, which is statistically significant at the 1% level, meaning that there is less than a 1 in 100 chance that the abnormal return happened by mere chance.

b. October 16, 2007

74. Prior to the start of trading on the NYSE on Thursday, October 16, 2007, Bloomberg L.P. reported that China Citic Group might buy a stake in Bear Stearns.[53] Bloomberg L.P. also reported that other potential investors included Berkshire Hathaway Inc., Bank

[53] Bloomberg L.P., "China Citic Bids for Bear Stearns Stake, Jiang Says," October 16, 2007.

of America Corp., Wachovia Corp., and China Construction Bank Corp.[54] Throughout the day on October 16, 2007, Bloomberg L.P. published various news articles that reiterated the information that China Citic Group might buy a stake in Bear Stearns.[55] The news regarding the potential new private equity investment would suggest that sophisticated private investors were satisfied with Bear Stearns' prospects, which provides their implicit certification of Bear Stearns and thus represents good news.

75. I have reviewed the media databases on Bloomberg, Thomson Research, and other news sources for Bear Stearns-related news articles published after the market close on October 15, 2007 through the market close on October 16, 2007. I did not find any additional notable news items regarding Bear Stearns that received any news coverage that day. Based on the economically significant announcement regarding China Citic's potential acquisition of an equity ownership stake in Bear Stearns, I expect Bear Stearns' common stock price to increase. In fact, Bear Stearns' common stock price increased 1.96% on October 16, 2007. (*See* Attachment 19.)

76. In order to calculate the abnormal return on Bear Stearns' common stock, I applied the *Modified Fama-French Three-Factor Model*, including the percentage change in the *Industry Index* as an explanatory variable. On October 16, 2007, the abnormal return resulting from the news announcement was 3.80%, which is statistically significant at the 1% level, meaning that there is less than a 1 in 100 chance that the abnormal return happened by mere chance.

c. February 15, 2008

77. During the day on Friday, February 15, 2008, Bloomberg L.P. reported that the increase

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[54] *Id.*

[55] Bloomberg L.P., "Bear Stearns Rises After China Citic Discloses Bid for Stake," October 16, 2007.

in Bear Stearns' stock price was due to rumors that Bear Stearns would be acquired.[56] A prospective merger is regarded as good news because an acquirer typically pays a premium over the shares' prevailing market price. The Bloomberg L.P. news article provided information about the rumor by quoting Michael Mainwald, the head of equity trading at Lek Securities Corp., stating that it was an "unconfirmed buyout rumor" but repeated the speculation in the market that there was a "$98 cash offer over the weekend."[57] After the market closed, Bloomberg L.P. published an article discussing the rumor and reported that as a result of the acquisition rumors, Bear Stearns call options had exhibited "five times the daily average [volume] during the prior 20 days."[58]

78. I have reviewed the media databases on Bloomberg, Thomson Research, and other news sources for Bear Stearns-related news articles published after the market close on February 14, 2008 through the market close on February 15, 2008. I did not find any additional notable news items regarding Bear Stearns that received any news coverage that day. Based on the economically significant news surrounding the potential acquisition of Bear Stearns, I expect Bear Stearns' common stock price to increase on February 15, 2008. In fact, Bear Stearns' common stock price increased 5.51%. (*See* Attachment 19.)

79. In order to calculate the abnormal return on Bear Stearns' common stock, I applied the *Modified Fama-French Three-Factor Model*, including the percentage change in the *Industry Index* as an explanatory variable. On February 15, 2008, the abnormal return resulting from the news announcement was 4.66%, which is statistically significant at

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[56] Bloomberg L.P., "Bear Stearns Rises Most in Two Weeks on Takeover Speculation," February 15, 2008.
[57] *Id.*
[58] Bloomberg L.P., "Bear Stearns Shares Advance on Takeover Speculation (Update3)," February 15, 2008.

the 1% level, meaning that there is less than a 1 in 100 chance that the abnormal return happened by mere chance.

d. March 14, 2008

80. Prior to the market opening on Friday, March 14, 2008, Bear Stearns announced that it had reached an agreement with JPMorgan whereby JPMorgan would provide a secured loan facility to Bear Stearns, which would give Bear Stearns access to increased funding and thereby shore up its liquidity.[59] As the trading day began, additional information regarding the secured loan facility and the issues surrounding Bear Stearns' liquidity came to light.

81. An article by the Associated Press discussed the Federal Reserve's unusual involvement in JPMorgan's agreeing to provide the secured loan facility to Bear Stearns.[60] The article specifically pointed out that the "arrangement allows JPMorgan Chase to borrow from the Fed's discount window and put up collateral from Bear Stearns to back up the loans. JPMorgan, a bank, has access to the discount window to obtain direct loans from the Fed, but Bear Stearns, an investment house, does not."[61]

82. During the day, Bear Stearns held an investor conference call to discuss the loan facility and Bear Stearns' liquidity.[62] On the investor conference call, Bear Stearns emphasized that its capital ratios remained in good shape but disclosed that its liquidity situation had deteriorated during the week. Bear Stearns reported that it had been working with Lazard to come up with alternative strategies for dealing with its liquidity issues.[63]

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[59] Bloomberg L.P., "Bear Stearns Agrees to Secured Loan Facility with JPMorgan Chase," March 14, 2008.
[60] Bloomberg L.P., "Fed Takes Rare Path to Aid Bear Stearns," March 14, 2008.
[61] *Id.*
[62] Bloomberg L.P., "Bear Stearns M&A/Other Teleconference," March 14, 2008.
[63] *Id.*

83. After the investor conference call, the market continued to react negatively to the news concerning the loan facility and Bear Stearns' liquidity issues. An analyst at Sanford C. Bernstein & Co. speculated on the future of Bear Stearns by commenting that Bear Stearns "can't issue bonds in the market place, trading volumes are going to drop like a stone and the hedge funds are all going to go elsewhere quickly in terms of doing their prime brokerage business."[64] Oppenheimer downgraded Bear Stearns to 'Underperform' and warned that Bear Stearns stock "could become worthless."[65]

84. Standard and Poor's cut Bear Stearns' credit rating, reducing its long-term counterparty credit rating by three notches to BBB and its short-term rating to A-3 from A-1.[66] Fitch also cut Bear Stearns' long-term credit rating to BBB from A+ and its short-term rating to F3 from F1.[67] Both S&P and Fitch also placed Bear Stearns on negative credit watch for possible further downgrades. The severe liquidity issues and the rating declines were negative news, which I would expect to elicit a negative stock price reaction.

85. I have reviewed the media databases on Bloomberg, Thomson Research, and other news sources for Bear Stearns-related news articles published after the market close on March 13, 2008 through the market close on March 14, 2008. I did not find any additional notable news items regarding Bear Stearns that received any news coverage that day. Based on the announcement regarding Bear Stearns' agreement with JPMorgan to provide a secured loan facility and information regarding the liquidity issues facing Bear Stearns, I expect Bear Stearns' common stock price to decrease. In fact, Bear Stearns' common stock price fell 47.37% on March 14, 2008. (*See* Attachment 19.)

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[64] Bloomberg L.P., "Bear Stearns May Not Resume Trading, Bernstein's Hintz Says," March 14, 2008.
[65] Bloomberg L.P., "Bear Stearns Cut to 'Underperform' by Oppenheimer's Whitney," March 14, 2008 and Bloomberg L.P., "Bear Stearns Stock 'Could Become Worthless,' Oppenheimer Says," March 14, 2008.
[66] Bloomberg L.P., "Bear Stearns Credit Rating Cut Three Levels, May Be Cut More," March 14, 2008.
[67] Bloomberg L.P., "Fitch Downgrades Bear Stearns to 'BBB'; on Watch Negative," March 14, 2008.

86. In order to calculate the abnormal return on Bear Stearns' common stock, I applied the *Modified Fama-French Three-Factor Model*, including the percentage change in the *Industry Index* as an explanatory variable. On March 14, 2008, the abnormal return resulting from the news announcement was –41.08%, which is statistically significant at the 1% level, meaning that there is less than a 1 in 100 chance that the abnormal return happened by mere chance.

e. March 16 – 17, 2008

87. After the market closed on Friday, March 14, 2008, Moody's and DBRS followed in S&P and Fitch's footsteps and downgraded Bear Stearns. Moody's downgraded Bear Stearns' long-term rating to Baa1 from A2 and its short-term rating to Prime-2 from Prime-1.[68] Moody's also kept Bear Stearns on review for a possible further downgrade. Later in the evening, DBRS downgraded Bear Stearns and placed all its Bear Stearns ratings under review with negative implications.[69] Throughout the weekend, rumors swirled of an impending purchase of Bear Stearns. Finally, at 7:05PM on Sunday, March 16, 2008, a press release announced that JPMorgan would acquire Bear Stearns for $2.00 per share.[70] Mike Cavanagh, JPMorgan's CFO, said on a conference call Sunday night that JPMorgan would immediately guarantee the trading obligations of Bear Stearns and predicted that the deal would close in approximately 90 days.[71] The additional rating downgrades and the news concerning JPMorgan's acquisition of Bear Stearns for just $2 per share were negative news items, which I would expect to drive

[68] Bloomberg L.P., "Moody's Downgrades Bear Stearns to Baa1; Continues to Review Down," March 14, 2008.
[69] Bloomberg L.P., "DBRS Downgrades Bear Stearns to "A"; Under Review – Negative," March 14, 2008.
[70] Bloomberg L.P., "JPMorgan Chase to Acquire Bear Stearns," March 16, 2008.
[71] Thomson StreetEvents, "JPM – JPMorgan Chase to Acquire Bear Stearns – Conference Call," March 16, 2008.

Bear Stearns' share price downward from the previous closing price to around $2 per share.[72]

88. Prior to the market opening on Monday, March 17, 2008, Moody's placed Bear Stearns on review for upgrade.[73] In addition, Citic Securities announced the cancelation of its previously declared strategic partnership with Bear Stearns, which was a deal to buy $1 billion of convertible preferred securities that had not yet been finalized.[74] Goldman announced a cut in its price target for Bear Stearns to $2.00 from its previous price target of $79.00.[75] Furthermore, S&P removed Bear Stearns from its negative credit watch, and Fitch upgraded Bear Stearns' long-term rating to A- and placed Bear Stearns' short-term and long-term credit ratings on positive credit watch in response to the JPMorgan acquisition announcement.[76]

89. Once the market opened on Monday, March 17, 2008, Bear Stearns' common stock price fell 87% in the first twenty minutes of trading.[77] The news regarding Bear Stearns' sale was the subject of extensive commentary throughout the day. Notably, an analyst at HSBC described the sale price as a "stunning loss of value in Bear Stearns" and as "decidedly unsettling."[78] Analysts at Oppenheimer described the special financing the Fed would provide in connection with the transaction, stating that "[t]he Fed has agreed to fund up to $30 billion of Bear Stearns' less liquid assets," referring to Bear Stearns'

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[72] The share price would not drop to $2 per share if investors expected that JPMorgan would raise its bid, for example, if another potential acquirer were to express interest in bidding for Bear Stearns.
[73] Bloomberg L.P., "*Moody's Places Bear Stearns' Baa1 RTG on Review for Upgrade," March 17, 2008.
[74] Bloomberg L.P., "*Citic to Cancel Bear Stearns Investment, Citic Group Says," March 17, 2008.
[75] Bloomberg L.P., "Bear Stearns Price Est. Cut to $2 vs $79 at Goldman," March 17, 2008.
[76] Bloomberg L.P., "*Bear Stearns Counterparty Credit Off Watch Negative By S&P," March 17, 2008 and Bloomberg L.P., "Fitch Affirms JPMC; Upgrds Bear Stearns & Places on RWP," March 17, 2008.
[77] Bloomberg L.P., "MarketWatch: Bear Stearns down 87% at $3.89 in opening trade," March 17, 2008.
[78] Hesser, Van, and Daphne Feng, "Bailout of Bear Stearns: Stunning loss of value will heighten investor angst toward sector," HSBC Global Research, March 17, 2008.

mortgage-related assets.[79] The body of news regarding Bear Stearns was overwhelmingly negative, principally due to the news regarding the JPMorgan purchase of Bear Stearns for just $2 per share. I would expect a negative share price reaction in an efficient market as soon as the stock opens for trading.

90. Approximately an hour before the close of the market that day, the first class action lawsuit was filed against Bear Stearns alleging fraud in connection with Bear Stearns' collapse.[80]

91. I have reviewed the media databases on Bloomberg, Thomson Research, and other news sources for Bear Stearns-related articles published after the market close on Friday, March 14, 2008 through the market close on Monday, March 17, 2008. I did not find any additional notable news items regarding Bear Stearns that received any news coverage on those days. Based on the economically significant announcement regarding JPMorgan's acquisition of Bear Stearns for $2.00 per share, I expect Bear Stearns' common stock price to decrease. In fact, Bear Stearns' common stock price fell 83.97% on March 17, 2008. (*See* Attachment 19.)

92. In order to calculate the abnormal return on Bear Stearns' common stock, I applied the *Modified Fama-French Three-Factor Model*, including the percentage change in the *Industry Index* as an explanatory variable. On March 17, 2008, the abnormal return resulting from the news announcement was -77.24%, which is statistically significant at the 1% level, meaning that there is less than a 1 in 100 chance that the abnormal return happened by mere chance.

[79] Whitney, Meredith, Kaimon Chung, and Joseph Mack, "JPM Buys BSC for $2 a Share," Oppenheimer, March 17, 2008.
[80] Bloomberg L.P., "BSC: Bear Stearns: CNBC reports first class action suit filed," March 17, 2008.

B. Application of the Elmer Krogman Factors to the Market for Bear Stearns' Common Stock

93. In addition to the five Cammer factors, I also applied the three Elmer Krogman factors to examine further the efficiency of the market for Bear Stearns' common stock during the Relevant Period.

i. Company's Market Capitalization

94. During the Relevant Period, the quarterly average market capitalization of Bear Stearns' common stock ranged from $1.2 billion to $19.1 billion. (*See* Attachment 21.)

95. The NYSE is the world's largest and most liquid stock exchange. Its infrastructure and participants allow it to provide a reliable, liquid, and efficient market place. Its stringent listing standards insure that issuers are large enough to facilitate a liquid market, and its regulations insure that material company information is disclosed promptly to investors. In general, to be listed on the NYSE, the market value of public held equity must exceed $60 million.[81]

96. Bear Stearns' common stock was traded on the NYSE throughout the entire Relevant Period. As Bromberg and Lowenfels stated:

> [A]t a minimum, there should be a presumption – probably conditional for class determination – that certain markets are developed and efficient for virtually all securities traded there: the New York and American Stock Exchanges, the Chicago Board Options Exchange and the Nasdaq National Market System.[82]

Bear Stearns' listing on the NYSE is consistent with the market for its common stock being efficient during the Relevant Period.

97. During the Relevant Period, Bear Stearns' common stock market capitalization on average was approximately 229 times as large as the $60 million minimum for NYSE

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[81] Current NYSE Market Listing Standards available at https://usequities.nyx.com/listings/list-with-nyse/nyse-mkt-listing-standards.
[82] Cammer at 1292, citing Bromberg & Lowenfels.

listing. The median market capitalization for all stocks traded on the NYSE ranged from $1.8 billion to $2.3 billion, during the Relevant Period.[83] Among all stocks traded on the NYSE, Bear Stearns' common stock was between the 79th and 87th percentiles, or on average, the 85th percentile, during the Relevant Period. The very large market capitalization of Bear Stearns in relation to the average market capitalization of NYSE stocks is consistent with the market for its common stock being efficient during the Relevant Period.

ii. Stock's Bid-Ask Spread

98. A stock's bid-ask spread provides an indication of the efficiency of the market for the stock. An efficient market is open and developed. An open market is one in which anyone, or at least a large number of persons, can buy or sell. A developed market is one which has a relatively high level of activity and trading frequency, and for which price and volume information is widely available. It usually has the ability to absorb a reasonable amount of trading with relatively small price changes. The wide availability of information about the stock and the high level of trading, which promote market efficiency, will lead market makers in the stock to set relatively small bid-ask spreads. Consequently, observing a small bid-ask spread for a stock would be consistent with the market for the stock being efficient.

99. During the Relevant Period, the average and median daily bid-ask spreads for Bear Stearns' common stock were 0.11% and 0.06%, respectively.[84] (*See* Attachment 22.) For the calendar years 2007 and 2008, the average and median daily bid-ask spreads for

[83] Based on data provided by the Center for Research in Security Prices (CRSP), as of each calendar quarter from December 31, 2006 to December 31, 2007.

[84] Based on data provided by CRSP for the period from December 31, 2006 to December 31, 2007.

all ordinary common shares traded on the NYSE were 0.31%, and 0.14%, respectively.[85] Thus, the average and median bid-ask spreads for Bear Stearns' common stock were below the average and the median, respectively, for all NYSE common stocks in 2007 and 2008, which is evidence that supports market efficiency.

iii. Stock's Public Float

100. During the Relevant Period, the percentage public float of Bear Stearns' common stock, calculated as the number of shares outstanding less the number of shares held by insiders divided by the number of shares outstanding, ranged from 84% to 94%. (*See* Attachment 21.) Bear Stearns' common stock, therefore, was mainly held by outside investors during the Relevant Period. Additionally, the quarterly market value of the public float for Bear Stearns' common stock ranged from $1.1 billion to $17.8 billion during the Relevant Period, although it was in the lower half of this range during 2008. (*See* Attachment 21.)

101. The large size of the public float for Bear Stearns' common stock suggests a liquid market for the stock. As noted, an efficient market is open and developed. A developed market is one which has a relatively high level of activity and trading frequency, and therefore usually has the ability to absorb a reasonable amount of trading with relatively small price changes, which is the hallmark of a liquid market. Consequently, the large public float for Bear Stearns common stock during the Relevant Period is consistent with the hypothesis that the market for Bear Stearns' common stock was a liquid, efficient market during the Relevant Period.

[85] Based on data provided by CRSP.

C. Additional Factors Considered

102. In addition to the Cammer factors and the Elmer Krogman factors discussed in the previous sections of this report, I also performed two sets of additional tests for market efficiency that are described in the economics literature. These tests can provide valuable insights into whether the market for a security is efficient.[86] The additional tests I conducted are (a) testing whether the "put-call parity" relationship between Bear Stearns' common stock prices and the prices of the call options and put options on Bear Stearns' common stock was satisfied during the Relevant Period and (b) performing "random walk" tests to investigate whether it would be possible for investors to predict future stock returns from past stock returns, which is not possible in an efficient market.

[86] This literature includes Ofek, Eli, Matthew P. Richardson, and Robert F. Whitelaw, "Limited Arbitrage and Short Sales Restrictions: Evidence from the Options Markets," *Journal of Financial Economics*, 74, 2004, pages 305-342; Evans, Richard B., Christopher C. Gezvy, David K. Musto, and Adam V. Reed, "Failure is an Option: Impediments to Short Selling and Option Prices," *Review of Financial Studies*, 22, 2009, pages 1955-1980; Battalio, Robert, and Paul Schultz, "Options and the Bubble," *Journal of Finance*, 2006, pages 2071-2102; Fama, Eugene, "The Behavior of Stock Prices," *Journal of Business*, 38, 1965, pages 34-105; Elton, Edwin J., Martin J. Gruber, Stephen J. Brown, and William N. Goetzmann, Modern Portfolio Theory and Investment Analysis, 6th ed., John Wiley & Sons, Inc., Hoboken, NJ, 2003; Fama, Eugene F. and Kenneth R. French, "Permanent and Temporary Components of Stock Prices," *Journal of Political Economy*, 96, 1988, pages 246-273; Dufour, Jean-Marie, Y. Lepage, and H. Zeidan, "Nonparametric Testing for Time Series: A Bibliography," *Canadian Journal of Statistics*, 10, 1982, pages 1-38; Mittsdorffer, R., and J. Diederich, "Prediction of First Day Returns of Initial Public Offering in the US Stock Market Using Rule Extraction from Support Vector Machines," *Studies in Computational Intelligence* (SCI), 80, 2008, pages 185–203; Luger, Richard, "Exact Nonparametric Tests for a Random Walk With Unknown Drift Under Conditional Heteroscedasticity," Research Department, Bank of Canada, pages 2-3; Campbell, B., and Jean-Marie Dufour, "Exact Nonparametric Orthogonality and Random Walk Tests," *Review of Economics and Statistics*, 77, February 1995, pages 1-16; Boehmer, Ekkehart and Eric K. Kelley, "Institutional Investors and the Informational Efficiency of Prices," *Review of Financial Studies*, 22, 2009, pages 3563-3594; Boehmer, Ekkehart, Charles M. Jones, and Xiaoyan Zhang, "Which Shorts Are Informed?," *Journal of Finance*, 63, April 2008, pages 491-527; Boehmer, Ekkehart and Juan Wu, "Short Selling and the Price Discovery Process,," *Journal of Financial Studies*, 26, 2013, pages 287-322; Klemkosky, Robert C. and Bruce G. Resnick, "Put-Call Parity and Market Efficiency," *Journal of Finance*, 34, December 1979, pages 1141-1155; Bris, Arturo, William N. Goetzmann, and Ning Zhu, "Efficiency and the Bear: Short Sales and the Markets Around the World," *Journal of Finance*, 62, June 2007, pages 1029-1079; and Elyasiani, Elyas, Shmuel Hauser, and Beni Lauterbach, "Market Response to Liquidity Improvements: Evidence from Exchange Listings," *Financial Review*, 41, 2000, pages 1-14.

i. Put-Call Parity Tests

103. Put-call parity expresses a relationship between the prices of a company's put and call options and the price of its common stock. *Put-call parity* should hold in an efficient capital market.[87] Testing whether put-call parity holds can assist in assessing whether the market for a company's common stock and the market for options on its common stock are efficient. Put-call parity tests are joint tests of the efficiency of the markets for the stock and for the options written on the stock.

104. A holder of an equity call option has the right to purchase the underlying stock at a specified strike price, or exercise price. A holder of an equity put option has the right to sell the underlying stock at a specified exercise price. If put-call parity holds, then the price of a put option ("P") with a particular strike price and expiration date will equal the price of a call option ("C") with the same strike price and expiration date minus the price of the underlying stock ("S_0") plus the present value of the exercise price ("$PV(X)$") plus the present value of the dividends on the underlying common stock expected to be paid during the remaining duration of the options ("$PV(dividend)$"). This relationship expressed in equation form is:

$$P = C - S_0 + PV(X) + PV(Dividend) \qquad \textit{(Equation 3)}$$

105. In this equation, the put and call options must have the same exercise price and expiration date. Rearranging this equation to express the share price produces the following equation:

$$S_0 = C - P + PV(X) + PV(Dividend) \qquad \textit{(Equation 4)}$$

[87] Ofek, Eli, Matthew P. Richardson, and Robert F. Whitelaw, "Limited Arbitrage and Short Sales Restrictions: Evidence from the Options Markets," *Journal of Financial Economics*, 74, 2004, pages 305-342, and Evans, Richard B., Christopher C. Gezvy, David K. Musto, and Adam V. Reed, "Failure is an Option: Impediments to Short Selling and Option Prices," *Review of Financial Studies*, 22, 2009, pages 1955-1980.

106. If this relationship does not hold,[88] which is commonly referred to as a *put-call parity violation*, arbitrageurs should be able to earn riskless profits by buying the relatively cheap assets and selling the relatively expensive ones. Such arbitrage opportunities generally do not occur (except possibly for very short periods time) in an efficient market. Academics have argued that in certain situations, short sale restrictions have limited the ability of arbitrageurs to take advantage of the mispricing of assets.[89] In particular, it has been argued that if investors are limited in their ability to sell the stock short, there will be a tendency for the share price on the left-hand side of Equation 4 to be greater than the sum of the elements on the right-hand side, in which case the stock will be overpriced and a riskless arbitrage opportunity will exist.

107. First, I investigated whether there is any evidence that might indicate whether short-sale constraints might have impeded an efficient market for Bear Stearns' common stock during the Relevant Period.[90] For NYSE stocks, the average short interest as a percentage of shares outstanding was 3.2% during the Relevant Period.[91] Bear Stearns' average short interest as a percentage of the number of shares outstanding during the Relevant Period was 10.4%. (*See* Attachment 23.)

108. Although the level of short interest was elevated during the end of 2007 and in 2008 before JPMorgan acquired Bear Stearns, the put-call parity test results will indicate

[88] The relationship embodied in Equation 4 is referred to as put-call parity. When put-call parity holds, the price of the firm's common stock, which is on the left-hand side of the equal sign in Equation 4, equals the sum of the variables on the right-hand side of the equal sign, which means that the combination of items produces exactly the same value as the share of common stock.

[89] Ofek, Eli, Matthew P. Richardson, and Robert F. Whitelaw, "Limited Arbitrage and Short Sales Restrictions: Evidence from the Options Markets," *Journal of Financial Economics*, 74, 2004, pages 305-342, and Evans, Richard B., Christopher C. Gezvy, David K. Musto, and Adam V. Reed, "Failure is an Option: Impediments to Short Selling and Option Prices," *Review of Financial Studies*, 22, 2009, pages 1955-1980.

[90] Battalio, Robert, and Paul Schultz, "Options and the Bubble," *Journal of Finance*, 2006, pages 2071-2102.

[91] The short interest for the NYSE is based on the short interest for all NYSE index members as reported by Bloomberg L.P.

whether any short-sale effects were strong enough to induce significant violations of put-call parity in the market for Bear Stearns' common stock during the Relevant Period. The put-call parity tests, which I perform next, test whether Bear Stearns' share traded at prices above where they would be expected to trade in a market with enough short selling to achieve and maintain put-call parity.

109. Using option pricing data obtained from the OptionMetrics database and common stock pricing data obtained from Bloomberg L.P., I investigated whether put-call parity held for Bear Stearns' common stock during the Relevant Period.[92] When put-call parity holds, the share price satisfies the equilibrium relationship stated in Equation 4, and it may be concluded that short selling is not being restricted. I matched calls and puts based on their exercise prices and expiration dates. I took the average of the best last bid and best last ask quotes to estimate the prices of the calls and puts. For the price of Bear Stearns' common stock, I used the common stock's last traded price. Dividends were set equal to the expected dividends to be received during the life of the option.[93] The dividends and the exercise price were discounted using interpolated yields on risk-free securities obtained from Bloomberg L.P. To improve the quality of the data, I deleted options with fewer than six calendar days to maturity or greater than 180 calendar days to maturity and options with a price less than $0.375.[94]

[92] Option market makers generally change their bid and ask quotes each time the underlying stock price changes. Consequently, there are bid and ask quotes regardless of the number of options contracts traded each day. Bid and ask quotes come from the NBBO (National Best Bid and Offer) data.

[93] For purposes of my calculations, I set the expected dividends to be equal to the actual dividends received during the life of the option. For the expected dividends after January 11, 2008, the last ex-dividend date for Bear Stearns, I assumed the expected dividends to be received were equal to the last dividend paid.

[94] These filters were applied in Evans, Richard B., Christopher C. Gezvy, David K. Musto, and Adam V. Reed, "Failure is an Option: Impediments to Short Selling and Option Prices," *Review of Financial Studies*, 22, 2009, page 1960.

110. After applying these filters, I was left with 12,034 pairs and a total of 7,553,136 put option and call option contracts. I calculated the put-call parity violation for each of these pairs using the following equation:

$$\textit{Put-Call Parity Violation} = \frac{[S_0 - C + P - PV(X) - PV(Dividend)]}{S_0} \qquad \textit{(Equation 5)}$$

Attachment 24 shows the results of the put-call parity violation tests for Bear Stearns' common stock on a monthly basis between December 2006 and March 2008.

111. Although the OptionMetrics database can be considered one of the best publicly available databases for options pricing data, some researchers have found that the option prices from the database have the potential to exaggerate the frequency of put-call parity violations.[95] Even after considering the potential for a higher frequency of put-call parity violations from the pricing data, I found that the average put-call parity violation for Bear Stearns' stock and options during the Relevant Period was only -0.044%. (*See* Attachment 24, Panel A.) The average Bear Stearns put-call parity violation is well below what is found in published academic research. The authors of "Failure is an Option: Impediments to Short Selling and Option Prices" found that the average put-call parity violation for 4.5 million pairs traded during 1998 and 1999 was 0.36% and that the standard deviation was 1.79%.[96] Thus, the range between minus one standard deviation and plus one standard deviation extends from -1.43% to 2.15%. None of the average monthly put-call parity violations during the Relevant Period falls outside this range. These tests support the efficiency of the market for Bear Stearns' common stock during the Relevant Period.

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[95] Battalio, Robert, and Paul Schultz, "Options and the Bubble," *Journal of Finance*, 61, 2006, page 2086.
[96] Evans, Richard B., Christopher C. Geczy, David K. Musto, and Adam V. Reed, "Failure is an Option: Impediments to Short Selling and Option Prices," *Review of Financial Studies*, 22, 2009, pages 1955-1980.

112. Additionally, the authors of "Limited Arbitrage and Short Sales Restrictions: Evidence from the Options Markets" analyzed 80,614 option pairs between July 1999 and November 2001.[97] They measured put-call parity violations by calculating the ratio $R = 100\ln(S/S^*)$, where S is the stock price and S^* is the price predicted by put and call option prices. The average R for their sample was 0.30. The average R for Bear Stearns' pairs is -0.043. (*See* Attachment 24, Panel B.) The interquartile range for this ratio (25^{th} percentile to the 75^{th} percentile) in the aforementioned study extends from -0.16 to 0.65.[98] The average R of -0.043 is well within this range. None of the monthly averages falls outside the 90% confidence band, which extends from -1.22 to 1.97.

113. The test results reported in Attachment 24 show that the put-call parity relationship held for Bear Stearns' common stock throughout the Relevant Period. In particular, there is no evidence that Bear Stearns' common stock price tended to be "too high" due to limits on short sales or any other restrictions on trading Bear Stearns stock that might otherwise impair market efficiency.

114. I also examined the average absolute value of put-call parity violations, which was 0.287% for the "Failure is an Option" method and 0.287% for the "R" method. (*See* Attachment 24.) These values are well within the respective ranges in the aforementioned studies, and thus, these results are consistent with the market for Bear Stearns' common stock and the market for Bear Stearns' call options and put options both being efficient during the Relevant Period. (*See* Attachment 24.)

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[97] Ofek, Eli, Matthew P. Richardson, and Robert F. Whitelaw, "Limited Arbitrage and Short Sales Restrictions: Evidence from the Options Markets," *Journal of Financial Economics*, 74, 2004, pages 305-342.
[98] *Id.*, page 316.

115. I also examined put-call parity for those options that were trading "near the money."[99] These options had exercise prices near the price of the common stock. The test results for this sub-sample are consistent with the test results for the overall sample. The average put-call parity violation was -0.056% for the "Failure is an Option" method, which is below the mean of 0.36%, and the average absolute value put-call parity violation was 0.178%, which is also below the mean of 0.36%. These test results are consistent with market efficiency for Bear Stearns' common stock during the Relevant Period. (*See* Attachment 24, Panel A.)

116. The fact that the put-call parity relationship held closely during the Relevant Period suggests that Bear Stearns' common stock price fairly reflected its intrinsic value, based on the publicly available information about Bear Stearns, as would be expected in an efficient market.[100] This is further evidence that the market for Bear Stearns' common stock was efficient during the Relevant Period.

ii. Random Walk Tests

117. Common stock returns follow what is known as a random walk in an efficient market.[101] Stock prices in an efficient market bounce around from moment to moment much like bubbles in a glass of soft drink; that is, when stock returns follow a random walk, stock price movements are independent from moment to moment. Accordingly, the returns on the stock each day are identically distributed. The pattern of stock prices is stable in the sense that the expected return and volatility do not change over time. Consequently, the

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[99] The sample was restricted to those pairs for which $-0.1 < \ln(S_0/\text{Exercise Price}) < 0.1$. This filter is discussed in Ofek, Eli, Matthew P. Richardson, and Robert F. Whitelaw, "Limited Arbitrage and Short Sales Restrictions: Evidence from the Options Markets," *Journal of Financial Economics*, 74, 2004, page 340.

[100] Ofek, Eli, Matthew P. Richardson, and Robert F. Whitelaw, "Limited Arbitrage and Short Sales Restrictions: Evidence from the Options Markets," *Journal of Financial Economics*, 74, 2004, pages 305-342, and Evans, Richard B., Christopher C. Gezvy, David K. Musto, and Adam V. Reed, "Failure is an Option: Impediments to Short Selling and Option Prices," *Review of Financial Studies*, 22, 2009, pages 1955-1980.

[101] Fama, Eugene, "The Behavior of Stock Prices," *Journal of Business*, 38, 1965, pages 34-105.

company's share price does not change in a predictable manner from one moment to the next, and investors cannot use past stock price movements to predict the next day's stock price movement.[102]

118. I performed two types of tests, parametric tests and non-parametric tests, to examine whether the random walk hypothesis could be rejected for Bear Stearns' common stock during the Relevant Period.[103] If share prices follow a random walk, stock price movements are independent from one day to the next; there is no serial correlation evident in the stock's daily returns. Testing the random walk hypothesis involves testing a stock's returns for serial correlation by investigating whether there is any evidence that stock price movements one day are systematically related to (i.e., correlated with) stock price movements on one or more subsequent days in a discernible pattern. If there is no evidence of serial correlation, then the random walk hypothesis cannot be rejected for the particular stock and the time period tested. Likewise, the hypothesis that the stock trades in an efficient market also cannot be rejected, at least for the period tested.

119. Parametric tests examine whether there is any serial correlation evident in day-to-day stock returns.[104] Parametric tests make certain assumptions about the stock returns that are inconsistent with actual stock returns. For example, the conventional regression test makes the assumption that the errors around the fitted regression line are normally distributed. The normal probability distribution allows for outcomes between negative

[102] Elton, Edwin J., Martin J. Gruber, Stephen J. Brown, and William N. Goetzmann, Modern Portfolio Theory and Investment Analysis, 6th ed., John Wiley & Sons, Inc., Hoboken, NJ, 2003, page 405.
[103] The random walk hypothesis is a financial theory stating that stock prices move according to a random walk, therefore future movement cannot be predicted.
[104] Fama, Eugene F. and Kenneth R. French, "Permanent and Temporary Components of Stock Prices," *Journal of Political Economy*, 96, 1988, pages 246-273. When serial correlation is present, day-to-day stock price movements are not independent, but instead, are systematically related in some manner.

and positive infinity.[105] However, stock returns are bounded below by returns of -100%, since stock prices cannot fall below zero. Consequently, the basic assumption underlying the conventional regression test does not strictly fit the data, even though it is usually a reasonable approximation. On the other hand, non-parametric tests are distribution-free and thus may be considered more appropriate when performing random walk tests to examine market efficiency.[106] In an abundance of caution, I ran both types of tests.

a. Non-Parametric Tests

120. I ran two non-parametric statistical sign tests, the *McNemar Test* and the *Wilcoxon Signed-rank Test*, to investigate whether the returns on Bear Stearns' common stock followed a random walk during the Relevant Period. There is an extensive financial literature on the use of non-parametric sign tests to examine evidence of a random walk in stock returns.[107] As I have noted, in an efficient market, the stock price follows a random walk. Consequently, the returns on successive days are independent of one another, and the probability of an increase in price and the probability of a decrease in price should be equal and independent of past returns. However, as pointed out by Professor Eugene Fama in his seminal paper on the behavior of stock prices:

> Now in fact we can probably never hope to find a time series [of stock prices] that is characterized by *perfect* independence. Thus, strictly speaking, the random walk theory cannot be a completely accurate description of reality. For practical purposes, however, we may be willing to accept the independence assumption of

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[105] There is an extensive academic literature that furnishes evidence that stock returns are not normally distributed. One of the most often cited papers in this literature is Fama, Eugene, "The Behavior of Stock Prices," *Journal of Business*, 38, 1965, pages 34-105.

[106] One drawback of the non-parametric tests I performed is that the tests can only detect 1-day lag serial correlation. Therefore, I also performed parametric tests to confirm the results of the non-parametric tests and to test for the existence of serial correlation lags of up to five days.

[107] For a survey of this literature, *see* Dufour, Jean-Marie, Y. Lepage, and H. Zeidan, "Nonparametric Testing for Time Series: A Bibliography," *Canadian Journal of Statistics*, 10, 1982, pages 1-38.

> the model as long as the dependence in the series of successive price changes is not above some 'minimum acceptable' level.[108]

121. The *McNemar Test* is used to determine whether there is an equal probability between two events: (a) a positive return today is followed by a negative return tomorrow and (b) a negative return today is followed by a positive return tomorrow.[109] In an efficient market where stock prices exhibit a random walk, the probabilities of both events happening should be equal. As shown in Panel A of Attachment 25, during the Relevant Period, there are 74 observations where a positive return one day is followed by a negative return the next day and also 74 observations where a negative return one day is followed by a positive return the next day. Thus, in this case, there is an equal probability of a positive return followed by a negative return and a negative return followed by a positive return. Consequently, the *McNemar Test* statistic is 0.0068 with a p-value of 0.9345, which is far from statistical significance. Therefore, the null hypothesis that the probabilities of a positive (negative) return one day followed by a negative (positive) return the next day are equal cannot be rejected. Simply, an investor cannot profit on one day solely by knowing the return of the stock the previous day.

122. The second non-parametric random walk test I performed is the *Wilcoxon Signed-rank Test*.[110] It examines whether there is an equal probability that a positive (negative) return one day is followed by a negative (positive) return the next day. This test is different from the *McNemar Test* because it accounts for both the direction and the

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[108] Fama, Eugene, "The Behavior of Stock Prices," *Journal of Business*, 38, 1965, page 35.

[109] Mittsdorffer, R., and J. Diederich, "Prediction of First-Day Returns of Initial Public Offering in the US Stock Market Using Rule Extraction from Support Vector Machines," *Studies in Computational Intelligence* (SCI), 80, 2008, pages 185–203; and Dufour, Jean-Marie, Y. Lepage, and H. Zeidan, "Nonparametric Testing for Time Series: A Bibliography," *Canadian Journal of Statistics*, 10, 1982, pages 1–38.

[110] Luger, Richard, "Exact Non-Parametric Tests for a Random Walk With Unknown Drift Under Conditional Heteroscedasticity," Research Department, Bank of Canada, pages 2–3; and Campbell, B., and Jean-Marie Dufour, "Exact Nonparametric Orthogonality and Random Walk Tests," *Review of Economics and Statistics*, 77, February 1995, pages 1–16.

magnitude of the return changes. The median difference between consecutive daily returns should be zero in a random-walk time series. As shown in Panel B of Attachment 25, during the Relevant Period, the *Wilcoxon Signed-rank Test* t-statistic is 0.2964, and the p-value is 0.7669, which is again far from statistical significance. Therefore, the null hypothesis that the median difference in consecutive daily returns is zero cannot be rejected.

123. The results of the non-parametric tests of the random walk hypothesis are consistent with a random walk time series of Bear Stearns stock prices during the Relevant Period. Both sets of test results support the hypothesis that Bear Stearns' common stock traded in an efficient market during the Relevant Period.

b. Parametric Tests

124. The time series of Bear Stearns stock returns should not exhibit any serial correlation in an efficient market, whether it is serial correlation with a one-day lag (which the non-parametric tests are designed to detect) or lags longer than one day (which I investigate using a parametric test). In addition to the two non-parametric tests I just described, I also ran two sets of parametric tests, <u>regression tests for serial correlation</u> between Bear Stearns' common stock daily returns and prior day returns and the *Portmanteau Test* (*Q-Test*), to examine further whether there is any serial correlation evident in Bear Stearns' common stock returns during the Relevant Period. For each set of tests, I examined both Bear Stearns' common stock raw returns and the excess returns estimated from the *Modified Fama-French Three-Factor Model.*

125. In performing the serial-correlation tests, I first regressed Bear Stearns' raw returns on the stock's prior day raw returns. I ran the <u>regression tests for serial correlation</u> for six-month intervals during the Relevant Period because I found that the volatility of Bear

Stearns' common stock price increased throughout the Relevant Period, and the parametric tests are sensitive to changes in volatility. (*See* Attachment 26.) For each six-month interval, I found that only one of the test results was weakly significant at the 10% level. (*See* Attachment 27, Panel A.) The subperiod with the weakly significant test result is the portion of 2008 before JPMorgan agreed to acquire Bear Stearns, which was a period of unusually high stock price volatility. (*See* Attachment 26.)

126. Next, I also regressed Bear Stearns' excess returns for the Relevant Period estimated from the *Modified Fama-French Three-Factor Model* on the stock's prior day excess returns. I ran the regressions for Bear Stearns' excess returns for six-month intervals during the Relevant Period, just as I did the regressions based on raw returns. For these six-month intervals, I found that one of the test results, the one for the portion of 2008 before JPMorgan agreed to acquire Bear Stearns, was statistically significant at the 10% level. (*See* Attachment 27, Panel A.)

127. Thus, these serial correlation test results taken collectively do not furnish any evidence of statistically significant serial correlation for the Relevant Period through 2007 but they do furnish some evidence of serial correlation during the brief portion of the Relevant Period that lies in 2008, which is right before Bear Stearns failed and during which Bear Stearns' common stock price was unusually highly volatile. The regression test results are consistent with market efficiency at least through 2007; both sets of regression test results (based on raw returns and based on excess returns) indicate that the pattern of returns for Bear Stearns' common stock is consistent with a random walk during the Relevant Period at least through the end of 2007.

128. In addition, I performed the *Portmanteau Test* (*Q-Test*), which examines whether there is any serial correlation between Bear Stearns' common stock returns and its prior daily

returns with between one-day and five-day lags. I ran the Portmanteau test using Bear Stearns' raw returns and its excess returns for the same six-month intervals during the Relevant Period as the simple serial correlation regression tests reported in Panel A. Using Bear Stearns' raw returns, for each six-month interval, I found that the p-values of the raw returns are in excess of 0.10 for each of the one-day to five-day lags. Thus, these test results do not support the hypothesis of serial correlation between returns with lags of five days or less. (*See* Attachment 27, Panel B.) In particular, the *Portmanteau Test* results in Panel B contradict the simple serial correlation test results in Panel A concerning the portion of the Relevant Period that lies within 2008. The *Portmanteau Test* of the raw returns does not detect any statistically significant serial correlation during this interval.

129. I reran the *Portmanteau Test* on Bear Stearns' excess returns for each six-month interval. I found that the p-values of the residuals are less than 0.10 for the lags greater than one day but not for a one-day lag during the first half of 2007. However, none of the other serial correlation tests detect any statistically significant serial correlation during the first half of 2007. The results of the *Portmanteau Tests* for serial correlation in Bear Stearns' excess common stock returns furnish some evidence of serial correlation, because three out of the 20 p-values are significant at the 5% level and one is significant at the 1% level. These test results conflict with the results of the *Portmanteau Tests* for serial correlation in Bear Stearns' raw common stock returns, which do not detect any evidence of serial correlation because none of the 20 p-values is significant at the 10% level. Even though there is some evidence of serial correlation in the excess returns, the results for the tests based on the excess returns taken together with the results of the tests based on the raw returns do not support the hypothesis of significant serial correlation

between returns with lags of five days or less during the Relevant Period. (*See* Attachment 27, Panel B.)

130. In sum, based on the results of the non-parametric and parametric tests taken collectively, it is my opinion that there is no significant serial correlation evident in Bear Stearns' common stock returns during the Relevant Period. None of the tests conducted has produced evidence of significant serial correlation that would contradict market efficiency for Bear Stearns' common stock. It is my opinion that the hypothesis that Bear Stearns' common stock returns followed a random walk during the Relevant Period, which would be indicative of an efficient market, cannot be rejected.

D. Conclusions Regarding the Efficiency of the Market for Bear Stearns' Common Stock During the Relevant Period

131. It is my opinion, based on the results of the tests described in the preceding paragraphs, that the market for Bear Stearns' common stock was open, developed, and efficient during the Relevant Period.

132. This opinion is based on the common stock's high volume of trading, the large number of securities analysts following Bear Stearns and its common stock coupled with a regular flow of company-specific information, the presence of a large number of market makers, the substantial number of Bear Stearns' common shares held and traded by institutional investors, Bear Stearns' eligibility to file registration statements on Form S-3, the demonstrable cause-and-effect relationship between the release of Bear Stearns-specific news and the prompt price reactions of Bear Stearns' common stock price, Bear Stearns' large market capitalization and large public float, the fact that Bear Stearns' common stock traded on the highly liquid NYSE throughout the entire Relevant Period with reasonably sized bid-ask spreads, the stable relationship between Bear Stearns'

common stock prices and the prices of the call options and the put options which conforms to put-call parity, and the evidence that Bear Stearns' common stock returns followed a random walk during the Relevant Period.

VI. Defendants' Misrepresentations and Omissions Identified in the Complaint

133. The complaint in this matter (the "Complaint") identifies both material misrepresentations and material omissions.[111] The distinction between the two is economically important. Material misrepresentations will artificially inflate the price of a company's stock (the stock price may go up in reaction to the statements or an otherwise expected decline in the stock price may be mitigated as a result of the statements), as investors react to the falsely positive information in the belief that it is true and materially complete. Omissions of adverse information, on the other hand, artificially avoid the negative stock price reaction that would be expected to occur if the true and/or materially complete information was disclosed to investors. Both misrepresentations and omissions result in artificial stock price inflation: the misrepresentations (fraud by commission) trigger a price increase or mitigate an otherwise expected price decrease that would not occur but for the fraud, and the omission of material negative information (fraud by omission) avoids a price decrease that would occur but for the fraud.

134. As alleged in the Complaint, defendants made several related categories of misrepresentations and material omissions.[112] Put simply, defendants allegedly misrepresented and omitted material information regarding (1) Bear Stearns' risk management practices (including its measurements of VaR), (2) the value and risks of

[111] *See Bruce S. Sherman v. Bear Stearns Companies Inc., et al.*, No. 09-8161(RWS) (S.D.N.Y.), Dkt. 1, (Complaint filed September 24, 2009).
[112] *Id.*, pages 1-2.

Bear Stearns' mortgages, mortgage-backed and asset-backed securities, and (3) the adequacy of Bear Stearns' liquidity and capital reserves. Defendants' alleged misrepresentations and omissions in each category are material, and together explain how fraud caused Bear Stearns' collapse.

135. First of all, defendants are alleged to have made a series of false statements and material omissions regarding the accuracy of Bear Stearns mortgage valuation, VaR and other quantitative models, and regarding the quality of Bear Stearns' risk management strategies and procedures. The defendants knew but failed to disclose throughout the Relevant Period that Bear Stearns' valuation models were outdated and inaccurate, and that those models had not been updated by the time Bear Stearns was acquired by JPMorgan; instead, the defendants consistently touted the accuracy and effectiveness of those models. Likewise, those models were not updated because Bear Stearns' risk management operations were severely deficient during the Relevant Period. Defendants failed to disclose that Bear Stearns' risk management operations were understaffed at critical points during the Relevant Period, and that those operations lacked the expertise necessary to either effectively monitor complex mortgage and asset-backed transactions, or undertake the needed comprehensive review of Bear Stearns' mortgage valuation and VaR models. Evidence supporting the foregoing allegations is discussed below. (*See infra*, Section VI.A).

136. Second, defendants are alleged to have made a series of false statements regarding the value and the riskiness of mortgages, mortgage-backed and asset-backed securities on the Company's books. Defendants, as discussed, allegedly knew that the models Bear Stearns used to assess those assets were flawed, and that those models were not updated before the Company's merger with JPMorgan. In addition, documents discussed below

demonstrate that Bear Stearns received criticism from counterparties, regulators and even from co-defendant Deloitte & Touche LLP regarding inaccurate valuations. (*See infra*, Section VI.B). Predictably, those outdated models mis-valued and misstated the risk of many assets held or examined by Bear Stearns, and as a result of the use of these outdated models, Bear Stearns overvalued assets it held and understated their risk.

137. Finally, Bear Stearns repeatedly made allegedly false statements regarding the adequacy of its liquidity and capital reserves. Those statements -- which were premised on inadequate risk management at Bear Stearns and on asset valuations that were not themselves accurate -- falsely reassured investors that Bear Stearns had sufficient liquidity and capital reserves even as lenders pulled away and traditional sources of funding dried up as the truth regarding Bear Stearns' deficient risk management and valuation practices began to leak into the market in mid-2007. From late 2007 onwards, Bear Stearns was desperate for funding, had reached out to non-traditional sources and was aware that its increasingly poor liquidity situation threatened the viability of the Company's business operations. Defendants were, by early 2008, concealing all of the aforementioned problems, i.e., the Company's liquidity issues, and the known deficiencies in the Company's risk management and valuation models and procedures, because they -- correctly -- anticipated that revealing them could prompt a run on the bank. When the Company's severe liquidity problems and inadequate capital reserves were revealed to the market in the second week of March 2008, that outcome materialized, and a run on the bank occurred. Documents supporting the foregoing allegations are discussed below. (*See infra*, Section VI.C).

A. Bear Stearns' Inadequate Valuation Models and Procedures

138. During the Relevant Period, Bear Stearns regularly issued financial statements publicly and repeatedly assured investors that its valuation and risk management models were adequate and that Bear Stearns' professionals regularly evaluated and enhanced those models, particularly the Company's VaR models. Bear Stearns' alleged misstatements in its public financial statements and its presentations to investors and securities analysts include, but are not limited to, the following statements (emphasis supplied):

a. In Bear Stearns' 10-K for the fiscal year ending November 30, 2006 (the "2006 10-K"), which was released to the public on February 13, 2007, the Company states that "a clear understanding of how its positions generate profit or loss on a daily basis is crucial to managing risk. Many of the independent units are actively **involved in ensuring the integrity and clarity of the daily profit and loss statements**. Activities include **daily and monthly price verification procedures,** position reconciliation, review of pricing models and review of recording of complex transactions."[113]

b. Bear Stearns also states in its 2006 10-K that its risk management procedures "begin with the Company marking its financial instruments owned to fair value on a daily basis and producing daily profit and loss statements for senior management covering all trading departments."[114]

c. In addition, Bear Stearns discussed its use of VaR models in its 2006 10-K, stating that it had performed "an entity-wide VaR analysis of the Company's financial assets and liabilities,... **The Company regularly evaluates and enhances such VaR models in an effort to more accurately measure risk of loss.**"[115] Bear Stearns included similar statements regarding Bear Stearns' VaR models in its 10-Q for the first quarter of 2007, 10-Q for the second quarter of 2007, 10-Q for the third quarter of 2007, and 10-K for the fiscal year 2007.[116]

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[113] Bear Stearns, Form 10-K for the fiscal year ending November 30, 2006, filed on February 13, 2007, p. 67.
[114] *Id,* p. 67.
[115] *Id,* p. 69.
[116] Bear Stearns, Form 10-Q for the first quarter of 2007, filed on April 9, 2007, p. 57; Bear Stearns, Form 10-Q for the second quarter of 2007, filed on July 10, 2007, p. 60; Bear Stearns, Form 10-Q for the third quarter of 2007, filed on October 10, 2007, p. 60; and Bear Stearns, Form 10-K for the period ending November 30, 2007, filed on January 29, 2008, p. 71.

d. Presentation material prepared for Bear Stearns' Fixed Income Investor Day held on February 1, 2007, and delivered by Michael J. Alix, a former Bear Stearns Chief Risk Officer, states that the Company's "independent" risk management department ensured that "[f]irmwide VaR and stress-testing [that] follows the product alignment" enabled Bear Stearns to "set limits, highlight large/unusual risks, and evaluate hedging strategies." [117]

e. Presentation material prepared for the UBS Financial Services Conference held on May 14, 2007, and delivered by Samuel L. Molinaro, a former Bear Stearns EVP and CFO, states that Bear Stearns' risk management personnel "[u]nderstand, measure and monitor the risk" Bear Stearns has assumed, highlighting the Company's risk management models, limits, and experience in risk management.[118]

f. In regard to the two Bear Stearns Hedge Funds, which collapsed in June 2007, Bear Stearns publicly stated that the risk management systems that Bear Stearns and the two Bear Stearns Hedge Funds had were different. On June 22, 2007, in a conference call held subsequent to the collapse of the two Bear Stearns Hedge Funds, Samuel Molinaro stated that "[t]he asset management side and the broker-dealer side are very much separate. And of course, we have to have appropriate Chinese walls between the two parties and did so here. And these funds did operate independently of our mortgage department and our broker-dealer operations. Clearly, there are controls in place in the asset management side – did not – and obviously did not envision a market dislocation of this degree and this kind of a liquidity drain."[119] This statement was misleading because the two Bear Stearns Hedge Funds used Bear Stearns' trading and risk management systems (Bear Stearns' BondStudio analytical system), the Bear Stearns repo desk marked the two Bear Stearns Hedge Funds' investments to market, and Bear Stearns' and BSAM's risk management departments monitored the two Bear Stearns Hedge Funds' investment positions.[120]

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[117] Bear Stearns, "Global Risk Management Overview," prepared for Fixed Income Investor Day, February 1, 2007. (BEAR 01234015-40) (Ex. 1).

[118] Bear Stearns, presentation material prepared for the UBS Financial Services Conference, May 14, 2007. (BEAR 01165949-93) (Ex. 2).

[119] Thomson StreetEvents, "Preliminary Transcript: BSC-Bear Stearns Comments on BSAM Structured Credit Strategies Funds," June 22, 2007.

[120] The Alternative Investment Management Association Limited (AIMA), "AIMA's illustrative questionnaire for Due Diligence of Bear Stearns High Grade Structured Credit Strategies Fund," May 1, 2006. (BEAR 01568638-59) (Ex. 3). AIMA is the leading global hedge fund and alternative investment industry association and produces, among other things, a set of due diligence questionnaires for those who are investing in or servicing the hedge fund industry. According to AIMA, the questionnaires are available only to members and institutional investors through AIMA's confidential database.

139. In contrast to Bear Stearns' public statements regarding its valuation models and risk management models and practices, multiple parties, including government agencies, external consulting firms, and even Bear Stearns' management, found during (or immediately preceding) the Relevant Period that Bear Stearns had serious problems with its valuation models and its risk management models and practices, including its VaR models. Those same findings demonstrate that the Company was aware that it had to improve its valuation and risk management models and procedures. The following paragraphs furnish evidence supporting these statements.

i. Comment Letter from the SEC dated December 2, 2005

140. On December 2, 2005, the United States Securities and Exchange Commission (SEC) sent a letter (the "2005 SEC Letter") to Bear Stearns, describing its findings following the SEC's examination conducted in connection with Bear Stearns' application under Appendix E of Rule 15c3-1 of the Securities Exchange Act of 1934 to be regulated as a consolidated supervised entity ("CSE").[121] The examination focused on several business areas, including, among others, Bear Stearns' internal control systems for managing market, credit, funding and liquidity, and operational risks. The 2005 SEC Letter, which was not made public, listed numerous concerns the SEC had identified during its examination.

141. The 2005 SEC Letter criticized Bear Stearns' market risk management practices (emphasis supplied):

a. **"The firm has a set of general policies but no procedures for its market risk management functions**...These policies should be enhanced to provide

[121] United States Securities and Exchange Commission, letter sent to Mr. Jeffery M. Farber, Senior Managing Director at Bear Stearns, dated December 2, 2005. (BEAR 01409439-63) (Ex. 4).

more specificity of the risk management procedures utilized to ensure that the procedures are adequate and complete."[122]

b. **"The firm does not maintain an overall firmwide Value-at-Risk ('VaR') limit.**"[123]

c. Bear Stearns lacked a firm-wide process for approving trading limit breaches and allowed "[c]ertain business heads [to] establish new trading limits and approve existing limit breaches with their sole written approval without direct approval from risk management."[124]

d. "The firm's stress testing results are not the subject of periodic formal discussions of risk committees or other management discussion... **[T]he stress testing results are not formally incorporated into the firm's risk management framework.**"[125]

e. "**[T]he firm's backtesting of 'clean' P&L had not incorporated various business.** The firm has completed its programming and coding for 'dirty PNL', while static or clean P&L is still in development for many trading areas."[126]

f. **Bear Stearns failed to update its VaR models and lacked any established "controls and written procedures related to the update of VaR data inputs and a periodic model review process...** [T]the firm's failure to update on a timely basis two of the six files used for sensitivities of corporate/credit spreads in that the data inputs, for which the firm's internal practice requires a weekly update, had gaps of several weeks and up to a month without the updated spread/sensitivity information. As a result, **the firm's daily VaR amounts could be based on stale data at any point in time.**"[127]

g. Bear Stearns "should enhance its pricing model validation policies to provide more specificity (i.e., written procedures)." A previous report concerning Bear Stearns' valuation of mortgage derivatives raised concerns regarding **"outdated models created a decade ago and limited documentation on**

[122] *Id.*, p. 5. (BEAR 01409443) (Ex. 4).
[123] *Id.*, p. 5. (BEAR 01409443) (Ex. 4).
[124] *Id.*, p. 6. (BEAR 01409444) (Ex. 4).
[125] *Id.*, p. 6. (BEAR 01409444) (Ex. 4).
[126] *Id.*, p. 7. (BEAR 01409445) (Ex. 4).
[127] *Id.*, pp. 7-8. (BEAR 01409445-6) (Ex. 4).

how the models work, however, no recommendations for corrective action were made in this review."[128]

h. Bear Stearns' existing price verification policies and procedures "need to be enhanced to include procedural controls to require trader level or portfolio level reviews based upon predetermined thresholds."[129]

142. The 2005 SEC Letter also criticized Bear Stearns' credit risk management practices (emphasis supplied):

a. "**The firm does not perform timely reviews of all counterparties as required by its written policies and procedures**....745 counterparties, representing more than $2.5 billion in exposure, were overdue for a credit review... The staff is concerned that **without timely credit reviews of the counterparties, the firm will not be aware of changes in the credit risk profile of its counterparties and could expose the firm to greater risk than it is aware of**."[130]

b. Bear Stearns Global Credit Department's "written procedures are not complete in many areas. Further, the written procedures frequently offer guidelines instead of requirements... Derivative Operations does not have written procedures regarding how to resolve disputed margin calls and how to handle delinquent margin calls."[131]

143. The 2005 SEC Letter also criticized Bear Stearns' funding and liquidity management practices (emphasis supplied):

a. "**The firm has not implemented written policies and procedures related to the funding and liquidity area,... The firm's contingency funding plan does not: 1) consider realistic stress scenarios**; 2) contain projected weekly cash flow analysis; or **3) require specific actions when liquidity falls below stated goals in a stress environment according to internal analyses. The staff believes that more specificity is needed in the firm's contingency funding plan[.]**"[132]

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128 *Id.*, p. 8. (BEAR 01409446) (Ex. 4).
129 *Id.*, p. 8. (BEAR 01409446) (Ex. 4).
130 *Id.*, p. 20. (BEAR 01409458) (Ex. 4).
131 *Id.*, pp. 20-21. (BEAR 01409458-9) (Ex. 4).
132 *Id.*, p. 24. (BEAR 01409462) (Ex. 4).

ii. Comment Letter from the Financial Services Authority (U.K.) dated September 19, 2007

144. On September 19, 2007, the Financial Services Authority ("FSA"), the U.K.'s principal securities regulator, sent a letter (the "2007 FSA Letter") to Bear Stearns providing feedback in response to the CAD2 model applications filed by two of Bear Stearns' UK subsidiaries, Bear Stearns International Limited ("BSIL") and Bear Stearns International Trading ("BSIT"),[133] for authorization to use Bear Stearns' internal VaR models to calculate their risk exposure for regulatory purposes.[134] The letter notes, among other issues, several deficiencies in Bear Stearns' VaR models, concerns about securities pricing, and inconsistencies in risk capture, as follows (emphasis supplied):

a. **"Documentation is lacking in a number of areas and we found some of the documentation provided to be deficient, for example, the VaR model documentation was not up to date."**[135]

b. Bear Stearns' ABS VaR model contained inconsistencies, specifically that "[t]he risk capture of ABS warehouse positions within **VaR seems inconsistent with the marking methodology**: the warehouse is marked to the lower of cost or market value whereas the VaR does not take this into account. We also have concerns, particularly in light of recent market events, regards the adequacy of the methods for capturing the risk of secondary ABS and CDO of ABS in the VaR model."[136]

c. Bear Stearns' VaR framework did not incorporate all applicable risks, and thus Bear Stearns needed to put together " a 'risks not in VaR' framework to identify, and quantify the risks that are inherent in [Bear Stearns' business], but that [Bear Stearns'] VaR model does not capture or does not capture sufficiently well."[137]

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[133] Samuel Molinaro, addressing the concerns raised about the VaR models used by BSIL and BSIT, testified that his "expectation" was that the VaR models used by Bear Stearns were similar. *See*, Deposition Testimony of Samuel Molinaro, December 4, 2014, 87:10-87:13 (Ex. 5).

[134] Financial Services Authority, letter sent to Kanwardeep Ahluwalia, Subject: BSIL and BSIT CAD2 Application, dated September 19, 2007. (BEAR 01652024-31) (Ex. 6).

[135] *Id.* (BEAR 01652026) (Ex. 6).

[136] *Id.* (BEAR 01652027) (Ex. 6).

[137] *Id.* (BEAR 01652027) (Ex. 6).

d. Bear Stearns' business unit controllers were criticized because "**there is no explicit mapping of products to models**; hence it is possible for two traders trading the same product to be using different models for risk and valuation purposes… **Traders also seem to have considerable flexibility with respect valuation adjustments… There is no formal daily P&L attribution reporting**."[138]

e. Finally, Bear Stearns' VaR model validation process was inconsistent, and the FSA noted that "[w]hilst it is possible to obtain a system-generated list of models used for books and records valuations, t**his is not reconciled to the list of validated models to ensure completeness of validation. In addition, validated models can still be amended post validation**."[139]

iii. Comment Letter from the SEC dated September 27, 2007 and the Subsequent Response Letter from Bear Stearns to the SEC

145. On January 31, 2008, Bear Stearns responded to a comment letter it had received from the SEC on September 27, 2007 regarding Bear Stearns' Form 10-K filed for the fiscal year ended November 30, 2006 (the "2007 SEC Letter").[140] The 2007 SEC Letter observed that Bear Stearns' 2006 Form 10-K disclosed that Bear Stearns had "interests in what [it] described as 'subprime' residential mortgages," but also noted that the filing "does not appear to . . . fully clarif[y] [Bear Stearns'] exposure to subprime loans."[141] To address this deficiency, the SEC determined that Bear Stearns needed to supplement its public Form 10-K disclosures with a "comprehensive analysis of [its] exposure to subprime loans."[142] In particular, the 2007 SEC Letter requested that Bear Stearns:

a. Provide details of its "risk management philosophy as it specifically relates to subprime loans[,]" including details of Bear Stearns' "origination policies[,]" Bear Stearns' "purchase securitization and retained interests in loans[,]" Bear Stearns'

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[138] *Id.* (BEAR 01652028) (Ex. 6).
[139] *Id.* (BEAR 01652029) (Ex. 6).
[140] Letter from Samuel J. Molinaro to John Cash, Accounting Branch Chief of the United States Securities and Exchange Commission's Division of Corporate Finance, dated January 31, 2008, responding to the SEC comment letter dated September 27, 2007 sent regarding Bear Stearns' Form 10-K for the Fiscal Year Ended November 30, 2006. (DT_JK_000003592) (Ex. 7).
[141] *Id.*, p. 2 (SEC Staff Comment 2).
[142] *Id.*, p. 4 (SEC Staff Comment 2(a)-(1)).

"investments in subprime mortgage-backed securities[,]" and Bear Stearns' "Loans, commitments and investments to/in subprime lenders."[143]

b. "[Q]uantify [its] portfolio of subprime residential mortgages."[144]

c. "Quantify the following regarding subprime residential mortgages . . . Non-performing loans; Non-accrual loans; The allowance for loan losses, and; The most recent provision for loan losses."[145]

d. "Quantify the principal amount and nature of any retained securitized interest in subprime residential mortgages."[146]

e. "Quantify [its] investments in any securities backed by subprime mortgages."[147]

f. "Quantify the current delinquencies in retained securitized subprime residential mortgages."[148]

g. "Quantify any write-offs/impairments related to retained interest in subprime residential mortgages."[149]

146. In response to the SEC's requests for the Company's proper disclosures on subprime loans, Bear Stearns acknowledged that the Company, in fact, did not clearly disclose its exposure to subprime mortgage loans.[150] The Company noted in its response letter that "based on the Company's level of involvement in subprime lending and the broader impact on global credit markets, a material adverse impact on the Company's financial condition, results of operations or liquidity is possible."[151] Bear Stearns continued to note that, in future filings, it would consider its level of involvement in subprime lending and would seek to enhance its disclosure of positions which drive such exposures.

[143] *Id.*, p. 5 (SEC Staff Comment 2(a)).
[144] *Id.*, p. 9 (SEC Staff Comment 2(b)).
[145] *Id.*, p. 9 (SEC Staff Comment 2(c)).
[146] *Id.*, p. 10 (SEC Staff Comment 2(d)).
[147] *Id.*, p. 11 (SEC Staff Comment 2(e)).
[148] *Id.*, p. 11 (SEC Staff Comment 2(f)).
[149] *Id.*, p. 12 (SEC Staff Comment 2(g)).
[150] *Id.*, p.14 (SEC Staff Comment 2(g)).
[151] *Id.*, p.14 (SEC Staff Comment 2(g)).

147. Bear Stearns' January 31, 2008 response letter provides extensive details regarding the Company's subprime mortgage exposure, such as its criteria for classifying loans as subprime, information about its risk management practices and procedures, its definition of non-performing loans and a quantification of its investments in assets backed by subprime mortgages.[152] Nevertheless, this material information regarding Bear Stearns' risk exposures to subprime mortgages was never disclosed to the public.

148. Bear Stearns' Form 10-K for the Fiscal Year Ended November 30, 2007 filed on January 29, 2008[153] -- i.e. two days *before* Bear Stearns submitted its response to comments regarding the prior year's filing -- contains no reference or response to the SEC Staff's comments. The SEC's review of Bear Stearns' response was not completed until April 2008,[154] and as a result, the details in Bear Stearns' responses remained undisclosed until well after Bear Stearns had collapsed and been acquired by JPMorgan.

iv. Oliver Wyman Reports

149. Oliver Wyman, or Mercer Oliver Wyman ("MOW" or "Wyman"), an outside consultant engaged by Bear Stearns, evaluated Bear Stearns' risk management policies and economic capital development procedures during the Relevant Period.

150. A Wyman report, dated July 17, 2007, contained its assessment of Bear Stearns' credit and market risk management practices, as follows:[155]

a. The report criticized the Bear Stearns' VaR framework because it "does not include movements corresponding to an ECAP-level stress event for most risk factors," and recommended that the "[s]ingle-step, short time horizon

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[152] *Id.*, pp. 2-14 (SEC Staff Comment 2(g)).
[153] Bear Stearns, Form 10-K for the fiscal year ended November 30, 2007, filed on January 29, 2008.
[154] *See* U.S. Securities and Exchange Commission, Office of Inspector General, Office of Audit, "SEC's Oversight of Bear Stearns and Related Entities: The Consolidated Supervised Entity Program," September 25, 2008, Report No. 446-A, at 45-46 (Ex. 8).
[155] Wyman, "Economic Capital Project, Market and credit risk working session," July 17, 2007. (BEAR 02002528-59) (Ex. 9).

would need to be extended to cover a longer time period with realistic simulation of management response."[156]

b. The report criticized Bear Stearns' existing stress testing framework noting that the "[f]requency of each stress scenario is not calibrated," and that the framework had a "limited range of hypothetical market scenarios compared to full simulation."[157]

c. The report noted deficiencies in Bear Stearns' credit rating models and scorecards because they "[m]ay not include some obligors (e.g. certain types of hedge funds)," and "[h]edge fund stress analysis [was] not calibrated to [a] specific confidence interval."[158]

d. The report recommended changes to Bear Stearns' default model, noting that "[a]ssumptions on time scaling of PD and management action need to be agreed," and that the model needs "[i]ntegration with market risk modeling."[159]

e. The report overall recommended that:

   i. Bear Stearns needed to "[e]stablish a consistent confidence level and time horizon for capitalization requirements";

   ii. Bear Stearns needed to "[m]odel market movements and credit defaults using simulations based on probability distributions and correlations";

   iii. Bear Stearns needed to "develop realistic assumptions regarding exposure horizons and management actions"; and

   iv. Bear Stearns needed to "[l]ink market and default simulations into an integrated Economic Capital modeling framework which recognizes cross-risk diversification benefits."[160]

151. A Wyman report, dated November 20, 2007, contains its assessment of Bear Stearns' risk management practices, as follows:[161]

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[156] *Id.* (BEAR 02002536) (Ex. 9).
[157] *Id.* (Ex. 9).
[158] *Id.* (Ex. 9).
[159] *Id.* (Ex. 9).
[160] *Id.* (BEAR 02002553) (Ex. 9).
[161] Wyman, "Risk Management Diagnostic, 1st Checkpoint" November 20, 2007. (BEAR 02002450-64) (Ex. 10).

a. The report noted that Bear Stearns' risk strategy "appears to be underdeveloped," explaining that the Company had "no formal risk appetite in place," the Company's "governance structure [was] not explicitly established," and the Company did not have a "mechanism for decision-making" primarily caused by the departure of Warren Spector.[162]

b. The report criticized Bear Stearns because its "firm-wide metrics such as VaR and stress tests [were] not viewed as accurate and timely," and also criticized Bear Stearns because it lacked "regular reporting" that provides "an integrated view across risk types."[163]

152. A Wyman report, dated February 5, 2008, contains its assessment and recommendations for Bear Stearns' risk management practices, as follows:[164]

a. The report identified the following "Gaps" in Bear Stearns' risk management practices: [165]

i. Bear Stearns lacked a "formal framework for risk appetite";

ii. Bear Stearns lacked a "clear process for approval of major trades";

iii. Bear Stearns lacked a "coherent limit structure with consistent enforcement";

iv. Bear Stearns had "underdeveloped processes for strategic risk assessment"; and

v. There was no "mandate for the Risk Policy Committee" or "institutional stature for Risk Management group" within Bear Stearns.

b. The report concluded by proposing a significant reorganization and firm-wide restructuring of Bear Stearns' risk management operations, including: [166]

i. Bear Stearns should "[c]harter a top-level risk committee (the Risk Policy Committee) to govern all credit and market (financial) risks with authority for specific risk areas delegated to subcommittees";

[162] *Id.* (BEAR 02002458) (Ex. 10).
[163] *Id.* (BEAR 02002460) (Ex. 10).
[164] Wyman, "Management Committee, Risk Governance Diagnostic, recommendations and case for Economic Capital development," February 5, 2008. (BEAR 00133913-29) (Ex. 11).
[165] *Id.* (BEAR 00133917) (Ex. 11).
[166] *Id.* (BEAR 00133919) (Ex. 11).

ii. Bear Stearns should "[c]reate a 5-person Trading Risk Committee as a subcommittee of the Risk Policy Committee";

iii. Bear Stearns should "[m]andate that the full Risk Policy Committee focus on two ongoing tasks: (a) risk appetite, policies and limit setting; and (b) strategic risk assessment"; and

iv. Bear Stearns should "[e]xpand the role of the Risk Management group to cover both independent governance/controls and effective dialog/advisory with the businesses at all levels of the organization."

153. A Wyman report, dated March 7, 2008, on the eve of Bear Stearns' final liquidity crisis, continued to note its criticisms and recommendations for Bear Stearns' risk management practices.[167] The report also identified "Gaps" in Bear Stearns' risk management practices and proposed a significant reorganization and firm-wide restructuring of Bear Stearns' risk management operation, which are identical to what was stated in the Wyman report provided on February 5, 2008.[168]

154. These risk management gaps constitute a fundamental weakness, which made Bear Stearns vulnerable to a loss of investor confidence, especially during a period of financial stress in which those risk management gaps would take on heightened importance.

v. Internal Email Communications among Knowledgeable Bear Stearns Employees

155. Even though Bear Stearns repeatedly informed investors that the Company conformed its business practices to the applicable rules and regulations and that its risk management models were appropriate and regularly updated, internal email communications among former Bear Stearns employees during the Relevant Period reveal that they were, in fact,

[167] Wyman, "Risk Offsite, Risk Governance Diagnostic, Recommendations and Case for Economic Capital Development," March 7, 2008. (BEAR 02001498-517) (Ex. 12).
[168] *Id.* (BEAR 02001502-4) (Ex. 12).

concerned about the adequacy of Bear Stearns' valuation models and outdated risk management systems. For example (emphasis supplied):

a. In an email exchange dated January 7, 2007 between Rupert Cox and Michael Alix, Rupert Cox states "[t]he commentary is actually pretty simple. The main trends in risk were driven by the mortgage desks' short position in interest rate risk which swelled to a peak in March and then drifted back down through the rest of the year… **Our positions in risky tranches contributed a fairly stable and in some ways surprisingly small amount of risk but I think that's due to the fact that VaR doesn't really capture the risk of these products which is fundamentally a tail risk.**"[169]

b. In an email dated April 14, 2007 from Thomas Marano to Michael Alix, Marano expresses concerns over various issues in Bear Stearns' risk management department.[170] Among other things, Marano notes **"I am VERY CONCERNED that if we have a build up of loans that are going to get liquidated then the combined speed and defaults will put us back in the mid 40's speed wise… We are all under strain from market conditions, lack of resources, outdated systems, and increased demands for analysis from many internal and external entities."** He also expresses concerns about the bad relationship between the risk management department and other business units, commenting that "**I think it is critical for you and others in senior management to understand the current tense and toxic relationship that is developing between Risk and the business units at all levels** and frankly across many desks and areas in fixed income. I have not ccd anybody on this email but I am seriously considering approaching Warren, Sam, Jeff, and Craig to discuss this situation… **I am seriously concerned about the consequences of the developing relationship between RISK and the business units for the firm.**"

c. An email exchange dated January 3, 2008 between Jonathan Kinlay and Thomas Marano discusses the Company's risk management, including mortgage model review.[171] Marano writes, "**I will be sure to discuss the wisdom of hiring 8 people in this market to review models that have not had substantial changes in 5 years.**" Kinlay responds expressing concerns

[169] Email dated January 5, 2007 from Rupert Cox to Michael Alix, Subject: RE: Risk Review 2006. (BEAR 01280265) (Ex. 13).
[170] Email dated April 14, 2007 from Thomas Marano to Michael Alix, Subject: couple things. (BEAR 01247911-5) (Ex. 14).
[171] Email exchange dated January 3, 2008 between Thomas Marano and Jonathan Kinlay, Subject: RE: Mortgage Model Review. (BEAR00292562-5) (Ex. 15).

about understaffing in the risk management department, stating that "**[t]hese are all replacement hires, to rebuild the Model Review team back up to the level we were at last year (everyone left). You might be interested to know that Bear Stearns has a comparatively light touch in MR compared to most of our competitors… Bear's team looks significantly under-resourced by comparison**... We also have outstanding commitments to regulators and auditors from last year, not least of which is to review some 25 cash/mortgage models which have not so far been looked at. **This task was supposed to be completed in 2007, but in fact we will only manage to complete the reviews by end 2008 if I have two people working on it full time. In the current climate, to be seen to be neglecting the clear mandate given by regulators to ensure that the Bank is operating risk controls that are commensurate with market norms would be to court disaster**."

d. An email dated June 5, 2007 from Rupert Cox to Michael Alix and other employees at Bear Stearns discusses problems an outside consultant, MOW, identified during Bear Stearns' stress testing, and in particular, the way it performed its VaR calculations.[172] In the email, Cox summarizes MOW's concerns regarding Bear Stearns' stress testing practices, noting that "**[t]here is not an explicit one year time horizon** – the stress tests we run are identified with one day, one week, and one month horizons… The industry standard, and what the regulators are used to seeing, is a one year horizon." He also notes another MOW concern that "[t]here is not an explicit confidence level. MOW is used to seeing banks express the goal of their capital measure as being to ensure they are capitalized to a level equivalent to some credit rating,… **The stress scenarios [of Bear Stearns] appear a bit arbitrary. MOW is used to seeing capital models based more on a VaR style analysis, looking back over every week for the last five years,…Our stress scenarios are plucked from the last twenty years' history based on our intuition about which ones are most likely to matter to us,…"** Cox generally agrees that Bear Stearns' stress testing approach to performing its economic capital calculation deviated from industry standards. The email discusses a number of possible ways to modify Bear Stearns' stress testing to address concerns identified by MOW.

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[172] Email dated June 5, 2007 from Rupert Cox to Michael Alix and other Bear Stearns employees, Subject: Economic Capital enhancement proposal. (BEAR00752730-2) (Ex. 16).

vi. Supporting Deposition Testimony from Former Bear Stearns Employees

156. Deposition Testimony in this action confirms that, during the Relevant Period, key members of Bear Stearns' management were aware of the problems regarding Bear Stearns' inadequate valuation models and procedures.

157. Deposition testimony of Ralph Cioffi,[173] the former Bear Stearns employee who managed the two Bear Stearns Hedge Funds that collapsed in June 2007, reveals that those funds operated without an effective accounting system, and with no functional oversight by risk managers. Specifically:

   a. Cioffi testified that the BSAM High-Grade funds did not have an accounting system that "was robust enough, you know, for hedge fund accounting."[174] He also testified that the High-Grade funds could only determine their "cash balances by hand and by piecing together reports[.]"[175]

   b. Cioffi testified that BSAM's compliance department stopped submitting "principal trade letters" documenting trades between Bear Stearns and the BSAM High-Grade funds to Bear Stearns' Compliance Department because the employee responsible for ensuring that those documents were prepared in a timely fashion left, and "was never replaced."[176] Ralph Cioffi also testified that this position remained vacant for several months, and that the preparation of this documentation "eventually just came to a halt[,]"[177] and that this failure, when discovered, prompted Bear Stearns to implement a moratorium on trading between the High-Grade funds and Bear Stearns.[178]

158. Deposition testimony of Samuel Molinaro,[179] a former Bear Stearns CFO throughout the Relevant Period, reveals that he was aware of Bear Stearns' outdated valuation models and procedures. Specifically:

   a. Molinaro testified that Bear Stearns' risk managers had a "backlog of models to review" throughout the period.[180]

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[173] Deposition Testimony of Ralph Cioffi, October 15, 2014 (Ex. 17).
[174] *Id.*, 139:22-140:2 (Ex. 17).
[175] *Id.*, 139:19-139:22 (Ex. 17).
[176] *Id.*, 99:20-99:22; 100:9-100:10 (Ex. 17).
[177] *Id.*, 101:14-102:12 (Ex. 17).
[178] *Id.*, 139:22-140:2 (Ex. 17).
[179] Deposition Testimony of Samuel Molinaro, December 4, 2014 (Ex. 5).

b. Regarding the SEC's finding in its 2005 SEC Letter that Bear Stearns did not formally incorporate stress testing results in to its risk management framework, Molinaro testified that he could not recall whether Bear Stearns ever "put in place an absolute formal risk limit."[181]

c. Regarding the SEC's observation in its 2005 SEC Letter that Bear Stearns did not ensure that its VaR models relied on timely data, Molinaro testified that he could not recall whether Bear ever implemented procedures or other measures designed to ensure that its VaR models were based on timely data inputs.[182]

159. Deposition testimony of Paul Friedman,[183] the Head of Bear Stearns' Repo Desk during the Relevant Period, demonstrates that Bear Stearns' valuation models substantially misvalued the assets securing the repo loan Bear Stearns extended to bail out the Bear Stearns-sponsored BSAM High Grade fund. In particular:

a. Friedman testified that Bear Stearns initially concluded that the assets securing the repo loan to bail out the BSAM High Grade fund were worth "a couple hundred million" dollars more than the loan itself (i.e. that there was a "cushion in terms of the value of the assets"), but that Bear Stearns' valuation "of those assets turned out to be incorrect."[184]

b. Friedman also testified that "there's no question that [those assets] ended up worth less than we thought they were worth"[185]

vii. Report Issued by the SEC's Office of Inspector General

160. Additionally, subsequent to Bear Stearns' collapse in March 2008, a report issued by the SEC's Office of Inspector General (the "2008 OIG Report") identified problems with Bear Stearns' VaR models during 2007 and 2008, confirming that Bear Stearns did not

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[180] *Id.*, 67:17-68:6 (Ex. 5).
[181] *Id.*, 48:18-49:8 (Ex. 5).
[182] *Id.*, 61:17-62:10 (Ex. 5).
[183] Deposition Testimony of Paul Friedman, December 5, 2014 (Ex. 18).
[184] *Id.*, 115:18-115:23 (Ex. 18).
[185] *Id.*, 178:13-179:8 (Ex. 18).

have adequate valuation models and procedures.[186] Among other things, that report found that (emphasis supplied):

a. "Bear Stearns did not periodically evaluate its VaR models, nor did it timely update inputs to its VaR models… **Bear Stearns used outdated models that were more than ten years old to value mortgage derivatives and had limited documentation on how the models worked. As a result, Bear Stearns' daily VaR amounts could have been based on obsolete data.** It was critically imperative for Bear Stearns' risk managers to review mortgage models because its primary business dealt with buying and selling mortgage-backed securities."[187]

b. The 2008 OIG Report identified various deficiencies in Bear Stearns' model review process and concluded that "**Bear Stearns' model review process lacked coverage of mortgage-backed and other asset-backed securities,** in part because the models were not used for pricing and in part because the sensitivities to various risk implied by the models did not reflect risk sensitivities consistent with price fluctuations in the market… At Bear Stearns, **traders used hedge ratios that were consistent with the traders' own models even though the risk managers' VaR models indicated that different hedge ratios would have been more appropriate…**"[188]

c. The 2008 OIG Report concluded that "at this time, **the risk managers at Bear Stearns did not have the skill sets that best matched Bear Stearns' business model**… Bear Stearns' head of model validation resigned around March 2007, precisely when the subprime crisis was beginning to hit . . . At exactly this point in time, **Bear Stearns had a tremendous need to rethink its mortgage models and lacked key senior risk modelers to engage in this process. As a result, mortgage modeling by risk managers floundered for many months**… [t]his disarray in risk management tended to give trading desks more power over risk managers."[189]

d. The 2008 OIG Report noted that "**the reviews of mortgage models that should have taken place before the subprime crisis erupted in February**

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[186] U.S. Securities and Exchange Commission, Office of Inspector General, Office of Audit, "SEC's Oversight of Bear Stearns and Related Entities: The Consolidated Supervised Entity Program," September 25, 2008, Report No. 446-A (Ex. 8).
[187] *Id.*, p. 20 (Ex. 8).
[188] *Id.*, pp. 21-22 (Ex. 8).
[189] *Id.*, pp. 22-23 (Ex. 8).

2007 appears to have never occurred, [and] was still a work in progress when Bear Stearns collapsed in March 2008."[190]

e. The 2008 OIG Report concluded that "Bear Stearns' **VaR models did not capture risks associated with credit spread widening** of non-agency mortgages that are prime or near-prime (Alt-A)... meaningful implementation of high grade and high yield mortgage credit spread scenarios requires both a measure of sensitivity of mortgage values to yield spreads as well as a model of how fundamental mortgage credit risk factors make yield spreads fluctuate. These fundamental factors include housing price appreciation, consumer credit scores, patterns of delinquency rates, and potentially other data. **These fundamental factors do not seem to have been incorporated into Bear Stearns' models at the time Bear Stearns became a CSE.**"[191]

f. The 2008 OIG Report noted that **Bear Stearns' risk managers had difficulty relating desk-specific VaR calculations to firm-wide VaR calculations.**[192] The report explained that "this occurred because each of Bear Stearns' trading desks evaluated profits and risks individually, as opposed to relying on one overall firm-wide approach... **Bear Stearns used VaR numbers more for regulatory reporting than for internal risk management.**"[193] The 2008 OIG Report, like the Wyman reports, criticized Bear Stearns for its lack of an overall risk limit.

g. The 2008 OIG Report noted the serious mark disputes Bear Stearns had with other major broker-dealers, which were becoming more common by the summer of 2007.[194] Bear Stearns told the SEC that during July 2007, there were two large dealers with whom Bear Stearns had mark disputes in excess of $100 million each.[195] These dealers were important to Bear Stearns because Bear Stearns had thousands of trades with each of them.[196] By March 2008, Bear Stearns' mark disputes involved even greater amounts.[197] The existence of such large mark disputes could lead these other dealers to question the validity of Bear Stearns' valuation models and reduce their

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190 *Id.*, p. 23 (Ex. 8).
191 *Id.*, p. 24 (Ex. 8).
192 *Id.*, p. 29 (Ex. 8).
193 *Id.*, p. 29 (Ex. 8).
194 *Id.*, pp. 27-28 (Ex. 8).
195 *Id.*, p. 28 (Ex. 8).
196 *Id.*, p. 28 (Ex. 8).
197 *Id.*, p. 28 (Ex. 8).

willingness to do business with Bear Stearns.[198]

161. In sum, the various reports, letters -- including the 2005 SEC Letter, the 2007 FSA Letter, the 2007 SEC Letter and the subsequent Bear Stearns' response letter -- the Wyman reports, the 2008 OIG Report, deposition testimony cited above, and Bear Stearns' internal email communications, demonstrate that Bear Stearns: (1) knew since at least 2005 that its mortgage derivatives models and its VaR models needed to undergo a thorough review and be updated, as did Bear's risk management operations; (2) that Bear Stearns nonetheless failed to complete a review of its mortgage derivative models before it collapsed in March 2008; (3) that Bear Stearns had not and did not regularly evaluate and enhance its VaR models so as to ensure that they accurately measured risk of loss; (4) that Bear Stearns had not and did not timely update the inputs to its VaR models; and (5) that Bear Stearns' public statements about its valuation models and procedures (see paragraph 138) were false and misleading.

B. Bear Stearns' Overvaluation of its Assets and Book Value of Equity

162. During the Relevant Period, Bear Stearns continued to inform investors that the value of the assets on its book, such as mortgages, MBS, ABS, derivative instruments, and its total assets and tangible book value of equity, were accurate. In particular, Bear Stearns highlighted its tangible book value in its presentations to investors as well as in its SEC filings. Its book value was, therefore, put forward by Bear Stearns as a very important measure of its value. Plaintiff Bruce S. Sherman has testified that Bear Stearns' tangible

[198] The 2008 OIG Report noted that Bear Stearns tended to use the more generous internal marks for its profit and loss purposes even when it agreed to use the more conservative marks when settling disputes with its trading and repo counterparties. *Id.*, p. 28 (Ex. 8).

book value was a very important valuation metric on which he relied in making his investment decisions regarding Bear Stearns' common stock.[199] For example:

a. On March 15, 2007, Bear Stearns held its first quarter 2007 earnings conference call, conducted by Samuel Molinaro, Bear Stearns' CFO. During the call, an analyst asked whether Bear Stearns had taken, or if Bear Stearns expected to take, any writedowns during the quarter as the subprime sector continued to deteriorate. Molinaro responded that the subprime market was a small part of Bear Stearns' overall business, and stated that the Company had reduced the number of subprime mortgages it was purchasing and securitizing.[200]

b. During an investor conference call held on September 20, 2007, Samuel Molinaro reported that Bear Stearns' book value at the close of the third quarter 2007 "was $91.82 per share with 144.6 million shares outstanding[,]"[201] and that "[a]t the end of August, the balance sheet was approximately $395 billion, which is down from 423 billion at the end of the May quarter and gross leverage has declined to approximately 29.9 times from 31.2 times at the end of the prior quarter."[202]

c. At its Investor's Day Conference held on October 4, 2007, Samuel Molinaro represented that Bear Stearns marked all of its assets to market, and that all asset values were verified by Bear Stearns' risk controllers.[203]

d. On January 9, 2008, Alan Schwartz, then Bear Stearns' new CEO, stated during a CNBC interview that there was no need to raise additional capital and that Bear Stearns was "adequately marked" to market on its investments and was "comfortable'" with its position.[204]

163. During the Relevant Period, Bear Stearns reported the values of its mortgages, MBS, ABS, derivative instruments, and total assets in its 10-Q for the first quarter of 2007, 10-

[199] Deposition of Bruce S. Sherman, dated December 16, 2014, 155:6-155:22 (Ex. 19).
[200] Transcript of First Quarter 2007 Earnings Conference Call held on March 15, 2007, p. 14. (PCM 00000638-654) (Ex. 20).
[201] Transcript of Third Quarter 2007 Earnings Conference Call held on September 20, 2007, p. 6. (PCM 00000617-637) (Ex. 21).
[202] *Id.*, p.7. (PCM 00000617-637) (Ex. 21).
[203] Presentation slides titled "Bear Stearns Financial Summary and Outlook," dated October 4, 2007, p. 3. (DT_JR_000001532) (Ex. 22).
[204] Bloomberg L.P., "Bear Stearns CEO Says Firm Is Adequately Marked to Market," January 9, 2008.

Q for the second quarter of 2007, 10-Q for the third quarter of 2007, 10-K for the fiscal year 2006, and 10-K for the fiscal year 2007, which it represented were accurate.[205]

164. In contrast to Bear Stearns' public statements asserting that its valuations of the mortgage-related assets on its books were accurate, multiple sources, including internal email communications among former Bear Stearns employees and the 2008 OIG Report, indicate that Bear Stearns overvalued these securities and that Bear Stearns' management was aware of the overvaluation and the problems to which this overvaluation was likely to give rise. The following paragraphs furnish evidence supporting these statements.

i. Internal Email Communications among Former Bear Stearns Employees

165. While Bear Stearns repeatedly assured investors that the values of the Company's assets were accurate, internal Bear Stearns email communications among former Bear Stearns employees during the Relevant Period reveal that at least some members of Bear Stearns' management were aware of the overvaluation of Bear Stearns' assets and were concerned about the implications of the overvaluation:

a. An email exchange dated February 14, 2007 between Edward Hida and Abram Pretorius and others discussed an internal audit report produced by Bear Stearns, which was issued on November 29, 2006 and which contained reviews of the Company's risk management control systems.[206] The audit report identifies several deficiencies, including a "**lack of credit model backtesting and limited portfolio stress testing,**" **a "lack of timely ongoing credit reviews of counterparties**," and a lack of a surveillance

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[205] Bear Stearns, Form 10-Q for the first quarter of 2007, filed on April 9, 2007; Bear Stearns, Form 10-Q for the second quarter of 2007, filed on July 10, 2007; Bear Stearns, Form 10-Q for the third quarter of 2007, filed on October 10, 2007; Bear Stearns, Form 10-K for the fiscal year ending November 30, 2006, filed on February 13, 2007; and Bear Stearns, Form 10-K for the period ending November 30, 2007, filed on January 29, 2008, p. 71.

[206] Email exchange dated February 14, 2007 between Edward Hida and Abram Pretorius and others, Subject: Bear Stearns IAD Global Credit Department report, and Bear Stearns "Internal Audit Report," dated November 29, 2006. (DT_DF_000007027-33) (Ex. 23).

process to review internal counterparty ratings, **identifying 86 instances of "counterparties whose internal ratings were more than 2 grades above/below their external ratings."**[207]

b. An email exchange dated August 21, 2007 between Samuel Molinaro and Wendy Demonchaux discusses Bear Stearns' balance sheet and the impact the declining housing market was having on its balance sheet.[208] Demonchaux explains in detail the steps that her division had taken to counter that decline but notes that "everyone else did nothing[.]" **Demonchaux also states that "the real problem is in the mortgage and asset backed area, whole loans are the funding issue, shouldn't they be the target? Have those traders been selling or are they afraid to see what the mark would be? Historically the traders just claim there is no market until the market rebounds, so they avoid the loss and avoid locking it in by cutting the position in stress. If you want to know where the real market is you have to sell something... They say there is no market, but I almost always find a market, it is just a matter of price."** Molinaro responded, "**[p]lan is simply to reduce those positions that free up either unsecured funding or repo capacity at the lowest possible cost to the firm. I'm avoiding the discussion of fairness by focusing on above agenda. Unfortunately most liquid things often go first with this approach.**"

c. An email exchange dated November 8, 2007 between Peter Bainlardi, Michael Nierenberg and Thomas Marano discusses Bear Stearns' risk management practices.[209] Specifically, Bainlardi identifies issues in Bear Stearns' risk management commenting that "our Risk management refuses to recognize the difference between real market prices we see and the Totem data[,]" and also that **risk management's treatment of the trading desk's marks implies "that the desk is being dishonest and systematically mis-marking the book."**

d. An email dated December 10, 2007 from Risk Management to Michael Alix and Samuel Molinaro discusses the pricing of a specific asset on Bear

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[207] *Id.*, pp. 3-5. (DT_DF_000007030-2) (Ex. 23). The fact that so many of Bear Stearns' internal credit ratings were considerably different from external credit ratings implies that Bear Stearns' credit risk management models were deficient, which could potentially lead to incorrect valuations of its fixed-income assets.

[208] Email exchange dated August 21, 2007 between Samuel Molinaro and Wendy Demonchaux, Subject: FW: Balance Sheet. (BEAR01087390-1) (Ex. 24).

[209] Email exchange dated November 7, 2007 between Peter Bainlardi, Michael Nierenberg and Thomas Marano, Subject: Re: Totem result for NY Oct07. (BEAR 01227508-10) (Ex. 25).

Stearns' books.[210] Email notes that "[t]hough our net exposure on this position is hedged, this could have wider pricing implications for the book. **If the customer mark is demonstrated to be more accurate than our own and we remark the rest of our ABS-backed CDO inventory consistently with it, the desk would take substantial write-downs.** The risk of such write-downs stems primarily from $330mm of Colonnade subordinate bond and super-senior cds risk we hold."[211]

ii. Report Issued by the SEC's Office of Inspector General

166. Additionally, the 2008 OIG Report identified problems regarding Bear Stearns' mark disputes with its counterparties during 2007 and 2008, confirming that Bear Stearns overvalued its assets.[212] A mark dispute can occur when two parties disagree over the value of assets, in particular, in a derivative transaction or a repurchase agreement (repo) transaction.[213] Among other things, that report found that (emphasis supplied):

a. During July 2007, Bear Stearns had mark disputes with "two large dealers," in "excess of $100 million each… By March 2008, Bear Stearns' mark disputes involved even larger amounts. For example, on March 12, 2008,… **Bear Stearns paid out $1.1 billion in disputes to numerous counterparties in order to squelch rumors that Bear Stearns could not meet its margin calls**… Bear Stearns tended to use the traders' more generous marks for profit and loss purposes, even when Bear Stearns conceded to the counterparty for collateral valuation processes."[214]

b. As the subprime crisis worsened in June 2007, the market began to freeze up. During the period, Bear Stearns "found it difficult to find ways to establish objective market values for assets as they became more thinly traded and therefore, less liquid."[215] When market illiquidity increases and assets are difficult to value, companies are required to take a proper markdown on the value of trading book assets. During this period, "numerous Bear Stearns' repo counterparties, such as hedge funds with positions in mortgage related

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[210] Email dated December 10, 2007 from Risk Management to Michael Alix and Samuel Molinaro and others, Subject: Daily Risk Highlights for 12/10/2007. (BEAR 01175431-3) (Ex. 26).
[211] *Id.* (BEAR 01175433) (Ex. 26).
[212] 2008 OIG Report, pp. 27-29 (Ex. 8).
[213] *Id.*, p. 27 (Ex. 8).
[214] *Id.*, p. 28 (Ex. 8).
[215] *Id.*, p. 29 (Ex. 8).

assets, suffered losses and demands for redemptions... **Bear Stearns may have been taking a smaller capital charges than Basel II requires.**"[216]

c. In connection with the two Bear Stearns Hedge Funds, "the capital charge incurred by Bear Stearns at the end of June 2007 was far less than the capital charge consistent with sound risk management."[217] "Bear Stearns' financing of the BSAM funds is conceptually similar to implicit support... literal securitizations, the funds invested in securitizations, and Bear Stearns' financing of the BSAM funds is a form of support in excess of Bear Stearns' contractual obligations to the funds. **The repo structure created the potential for Bear Stearns to overstate the amount to risk borne by BSAM and understate its own exposure; as a result, Bear Stearns' capital calculation would understate its true risk.**"[218]

167. In sum, as evidenced by Bear Stearns' internal communications and the 2008 OIG Report, the financial statements issued by Bear Stearns overstated the value of Bear Stearns' mortgage-related assets, and Bear Stearns' management was aware of its overvaluation of those assets.

C. Bear Stearns' Inadequate Liquidity and Capital Reserves

168. During the Relevant Period, Bear Stearns continued to assure investors that the Company had adequate liquidity and capital reserves. Bear Stearns' public assurances to investors regarding the adequacy of its liquidity and capital reserves include, but are not limited to, the following:

a. On June 22, 2007, Bear Stearns held a conference call to comment on the BSAM Structured Credit Strategies Funds, which had experienced significant liquidity difficulties in the prior few weeks. Samuel Molinaro announced in the call that it "will provide up to a $3.2 billion secured credit facility to the high-grade fund... in the form of a collateralized repurchase agreement and will enable the fund to improve liquidity and facilitate an orderly deleveraging of the fund." In

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216 *Id.*, pp. 30-31 (Ex. 8).
217 *Id.*, p. 31 (Ex. 8).
218 *Id.*, p. 31 (Ex. 8).

particular, Molinaro stated that "the Company's financial condition remains strong and we have ample liquidity to make the loans."[219]

b. On August 3, 2007, subsequent to S&P's cutting its outlook on Bear Stearns to negative from stable, Bear Stearns assured investors in a press release that its balance sheet was strong.[220] In particular, Bear Stearns stated that "**[c]ontrary to rumors in the marketplace, our franchise is profitable and healthy and our balance sheet is strong and liquid**… [T]he company has been solidly profitable…, while the balance sheet, capital base and liquidity profile have never been stronger. **Bear Stearns' risk exposures to high profile sectors are moderate and well-controlled**… This structure and strong risk management culture has allowed the firm to operate for all of its history as a public company without ever having an unprofitable quarter."

c. On August 3, 2007, Bear Stearns issued a press release entitled "Bear Stearns Responds to S&P Action," that, among other things, stated that Bear Stearns' "balance sheet, capital base and liquidity profile have never been stronger."[221] On the same day, Bear Stearns held an investor conference call, hosted by Jimmy Cayne, Samuel Molinaro, Bear Stearns' Chief Risk Officer Michael Alix, and Bear Stearns' Treasurer Robert Upton. During that call Molinaro represented that "with respect to liquidity, our balance sheet, capital base and liquidity profile remain strong."[222] Upton added that "Bear Stearns' liquidity and capital position is very solid . . . the firm's liquidity position, capital adequacy and funding capacity remains extremely solid notwithstanding the difficult market conditions."[223]

d. On August 5, 2007, shortly after S&P announced that it would lower Bear Stearns' credit outlook, Bear Stearns issued talking points to its brokers, which instructed them to, among other things, reassure customers that Bear Stearns' "liquidity position, capital adequacy and funding capacity remains extremely solid notwithstanding the current difficult market conditions" and also that Bear Stearns "continues to have ample liquidity to support our full range of business activities."[224]

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219 Thomson StreetEvents, "Preliminary Transcript: Bear Stearns Comments on BSAM Structured Credit Strategies Funds," June 22, 2007.
220 Bloomberg L.P., "Bear Stearns Responds to S&P Action," August 3, 2007.
221 Bear Stearns press release, "Bear Stearns Responds to S&P Action," August 3, 2007. (BEAR00917749) (Ex. 27).
222 Transcript of Bear Stearns Investor Conference Call, August 3, 2007, p. 3. (PCM 00000602-616) (Ex. 28).
223 *Id.*, pp. 3-4. (PCM 00000602-616) (Ex. 28).
224 Email dated August 5, 2007 from Elizabeth Ventura to multiple recipients, discussing "Customer Talking Points and other materials to use when talking to clients[.]" (BEAR00917733) (Ex. 29).

e. On September 20, 2007, Bear Stearns held its third-quarter earnings conference call where Samuel Molinaro stated that "**[w]ith respect to our balance sheet capital and liquidity position, our profile has never been stronger**." Molinaro stated that during the quarter, Bear "moved to enhance our liquidity position by reducing our balance sheet, reducing commercial paper outstandings, and increasing our cash liquidity pool." Molinaro further stated that "[o]ver the last several months we have materially reduced reliance on short-term unsecured funding while simultaneously building excess liquidity at the parent company."[225]

f. On November 14, 2007, Samuel Molinaro presented at the Merrill Lynch Banking and Financial Services Conference in New York. When asked about Bear Stearns' balance sheet and capital and liquidity management, Molinaro responded that "[w]e have been shrinking the balance sheet now, in the third quarter we brought it down, and my expectation is fourth quarter balance sheet will be lower." Molinaro further stated that "**[o]ur capital and liquidity position, we think, is very strong. Liquidity, in particular, is strong as it's ever been. We think our funding structure is very prudent, mostly secured term repo facilities**."[226]

g. On October 4, 2007, Bear Stearns hosted an "Investor Day" conference to review its recent operating results with investors.[227] During the presentation, Bear Stearns reassured investors regarding Bear Stearns' risk exposure to subprime mortgage securities and the adequacy of Bear Stearns' capital. In particular, Samuel Molinaro told investors that Bear Stearns had reduced its risk exposures, enhanced its liquidity, and materially increased its cash liquidity pool and claimed that Bear Stearns' liquidity profile remained strong.

h. On December 20, 2007, Bear Stearns held its fourth-quarter earnings conference call where Samuel Molinaro stated that "**[w]ith respect to our balance sheet, capital and liquidity position, our profile is strong**… and that [d]uring the quarter, we moved to enhance our liquidity position by reducing the risk on our balance sheet, continuing to reduce commercial paper outstandings and increasing secure term funding and maintaining our strong cash liquidity pool."[228]

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[225] Thomson StreetEvents, "BSC – Q3 2007 Bear Stearns Earnings Conference Call," September 20, 2007.
[226] Bloomberg News, "Bear Stearns Presentation Teleconference (Transcript) BSC US," November 14, 2007.
[227] Presentation slides, "Bear Stearns Financial Summary and Outlook," dated October 4, 2007, pp. 2-4. (DT_JR_000001534) (Ex. 22).
[228] Thomson StreetEvents, "BSC – Q4 2007 Bear Stearns Earnings Conference Call," December 20, 2007.

i. At a presentation delivered on February 8, 2008 at the Credit Suisse Financial Services Forum, Samuel Molinaro represented that Bear Stearns' "capital [was] fine; the funding mix has been improved (more secured; less reliance on [commercial paper]), and the liquidity profile has been enhanced[,]" and also that "Bear's unfunded commitments are down to $0; funded exposure, while not disclosed, is small enough such that incremental mark-downs are expected to be immaterial." [229]

169. However, these public statements were allegedly false and misleading because Bear Stearns' liquidity and capital reserves were not adequate, in part as a result of Bear Stearns' deficient valuation and risk management models and practices, and partly as a result of Bear Stearns' overvaluation of its assets. In particular, Bear Stearns experienced severe liquidity problems in the summer of 2007 following the failure of the two Bear Stearns Hedge Funds, as reflected in the following emails amongst Bear Stearns employees:

a. In an email exchange dated June 25, 2007, Timothy Greene writes **"[w]e are being very careful not to signal any hint of liquidity distress** and would not want to do so as a result of a spike in the balance sheet." Paul Friedman responds "We're going to think how to craft the message in terms getting rid of aged positions, paring down risk, etc. so as not to spook anyone."[230]

b. In an email exchange dated July 19, 2007 between Ray Mcgarrigal, Thomas Marano and Ralph Cioffi, which discusses the unwinding of the Bear Stearns Hedge Funds, **Mcgarrigal writes that "[l]iquidity is definitely shrinking.**"[231]

c. In an email dated July 28, 2007, Paul Friedman writes that **"we absolutely need to be vigilant about raising cash and minimizing funding risk we also need to be careful we don't send a signal that we're having problems."**[232]

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[229] Presentation, Credit Suisse Financial Services Forum Highlights. (PCM 00000559-592) (Ex. 30).

[230] Emails dated June 25, 2007 between Paul Friedman and Timothy Greene, Subject: re: Quarter End. (BEAR 01447342) (Ex. 31).

[231] Emails dated July 19, 2007 between Ray Mcgarrigal, Thomas Marano and Ralph Cioffi, Subject: Credit Genesis. (BEAR 00878324) (Ex. 32).

[232] Email dated July 28, 2007 from Paul Friedman to David Marren and others, Subject: funding. (BEAR 01452768) (Ex. 33).

d. In an email exchange dated August 3, 2007 between Samuel Molinaro, Michael Minikes and others, **Molinaro states that "[w]e need to create more liquidity ASAP."**[233]

e. In an email exchange dated August 9, 2007 between Paul Friedman, John Stacconi, Robert Upton and others, Stacconi writes that **"[w]e have over $1.0B of unsecured USD loans out of Europe which we need to roll. We're also losing $1.650B of equity repo cash today**." Friedman also writes that "[r]ight now no one is lending to anyone."[234]

f. In an email exchange dated August 12, 2007 discussing a proposed transaction with Teachers Reinsurance, John Stacconi writes that "**after a week of being denied additional credit by our banks and actually losing credit at the margin, I think we should tee this up.**"[235]

g. In an email exchange dated August 14, 2007, Sal Dimaggio tells Samuel Molinaro that "**so far we've lost $6.6 billion of repo desk funding, desk anticipates losing $2.75 billion more in the next month.**"[236]

h. In an email exchange dated August 20, 2007, Paul Friedman writes that "**Over the last 2-weeks we've lost $14.5 billion in funding**, primarily money we had that was available to be used against whole loans and non-Agency securities. **Against that we've taken in only $2.7 billion of money from new sources.. . . We have an additional $3.1 billion of funding that is either already scheduled to be pulled or at risk of leaving**. Roughly $500mm is going back this week. Another $1.9 billion is borrowed from CP conduits that are having trouble rolling[.]"[237]

170. Bear Stearns greatly increased its use of repurchase financing between 2002 and 2007. (*See* Attachment 28.) Its over-reliance on short-term repo financing – in particular, its failure to diversify its sources of funding – potentially placed the entire firm at risk. This

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[233] Email exchange dated August 3, 2007 between Samuel Molinaro, Michael Minikes and others, Subject: re: S&P Doing it Today. (BEAR00505732) (Ex. 34).
[234] Email exchange dated August 9, 2007 between Paul Friedman, John Stacconi, Robert Upton and others, Subject: RE: Europe. (BEAR00507684) (Ex. 35).
[235] Email exchange dated August 12, 2007 between Samuel Molinaro, Robert Upton, John Stacconi and others, Subject: Teachers Reinsurance. (BEAR00804364) (Ex. 36).
[236] Email dated August 14, 2007 from Sal Dimaggio to Sam, Subject: FW: Funding Situation. (BEAR00509006) (Ex. 37).
[237] Email exchange dated August 20, 2007 between Paul Friedman, Richie Metrick and others, Subject: funding. (BEAR 00510868) (Ex. 38).

form of financing could dry up in periods of financial distress.[238] In addition, Bear Stearns' heavy reliance on short-term funding coupled with its very high financial leverage and the long duration of its assets created a serious asset-liability mismatch, which could expose the firm to the risk of financial failure. Its high ratios of repurchase financing to short-term borrowing, repurchase financing to total debt, repurchase financing to total assets, repurchase financing and customer payables to current assets, repurchase financing and customer payables to total assets, long-term debt to total assets, and total debt to total assets are similar to those of Lehman Brothers, which went bankrupt in September 2008, and Merrill Lynch, which was acquired by Bank of America in September 2008 before it likely would have failed.[239]

171. Bear Stearns experienced severe liquidity problems during the Relevant Period and was exposed to high risk of financial failure due to its heavy reliance on short-term repurchase financing. The following paragraphs furnish evidence supporting these statements:

i. Internal Email Communications among Former Bear Stearns Employees

172. Internal Bear Stearns email communications reveal that Bear Stearns management, in particular, Paul Friedman, formerly Bear Stearns' Chief Operating Officer responsible for managing its operations within the fixed-income business, including its fixed-income repo desk, repeatedly expressed concerns about the Company's strained liquidity and capital inadequacy.

[238] Fitch Ratings, "Repo Markets, Shadow Banking Potential Liquidity Risks," March 19, 2012.
[239] Bloomberg News, "Bank of America to Acquire Merrill as Crisis Deepens (Update4)," September 15, 2008; The New York Times, "How the Thundering Herd Faltered and Fell," November, 9, 2008.

173. Paul Friedman's emails highlight the severe liquidity strains in the middle of 2007 and again starting in late 2007 and continuing until Bear Stearns collapsed in March 2008. In particular, Bear Stearns' repo desk was at the middle of the storm as Bear Stearns struggled to finance its business in the second half of 2007 and in early 2008. The following emails illustrate the depth of the concerns that Bear Stearns' management had regarding Bear Stearns' liquidity situation (emphasis supplied):

a. In an email dated May 9, 2007 from Thomas Marano to Paul Friedman and others, Marano stated his view regarding Bear Stearns' repo desk stating that "I do not run the repo desk or manage what is increasingly becoming an obvious balance sheet problem at this firm."[240]

b. In an email dated May 11, 2007 from Thomas Marano to Paul Friedman, Jeffrey Verschleiser, and others regarding retained interest bonds in Bear Stearns' asset portfolio, Marano notes "**You guys need to get a hit team on blowing the retained interest bonds out asap. This is the biggest source of balance sheet problems**. Please double s/c widen spreads or just blow the crpa out. Also consider finding another deal and swap like bonds."[241]

c. In an email exchange dated June 25, 2007 between Paul Friedman and Timothy Greene, Greene writes that "**[w]e do anticipate some money being called away for normal month end activity. With that in mind I think it important that trading heads be reminded not to jump on balance sheet intensive funding trades for customers. We are being very careful not to signal any hint of liquidity distress and would not want to do so as a result of a spike in the balance sheet**." Friedman responds that "**[w]e're going to think how to craft the message in terms getting rid of aged positions, paring down risk, etc. so as not to spook anyone**."[242]

d. In an email exchange dated August 17, 2007 between Paul Friedman and Patrick Lewis and others discussing Natixis and other banks that had been providing "evergreen" funding to Bear Stearns, Lewis writes that "**Nataxis wants out - but because we have an evergreen agreement they can't get**

[240] Email dated May 9, 2007 from Thomas Marano to Paul Friedman and others. (BEAR 01248786) (Ex. 39).
[241] Email dated May 11, 2007 from Thomas Marano to Paul Friedman and others. (BS-SEC1693503) (Ex. 40).
[242] Email exchange dated June 25, 2007 between Paul Friedman and Timothy Greene. (BEAR 01447342) (Ex. 31).

their money back for 5 more months. [W]e now have 5 months to replace the money (the market had better be more liquid in 6 months or we are indeed in trouble)." Friedman replies that "They're wonderful. I just think that **unless the banks all have amnesia, they will be far less willing to give out new ones in the future and we'll need to come up with something else to take their place.** But I hope I'm wrong."[243]

e. In an email dated August 20, 2007 from Paul Friedman to Richie Metrick and others (forwarded to Samuel Molinaro) discussing funding sources, Friedman notes that **"[o]ver the last 2 1/2 weeks we've lost $14.5 billion in funding, ... Against that we're taken in only $2.7 billion of money from new sources... We have an additional $3.1 billion of funding that is either already scheduled to be pulled or at risk of leaving.** Roughly $500mm is going back this week. Another $1.9 billion is borrowed from CP conduits that are having trouble rolling...We are having a significant dispute with State Street over the valuation of the collateral backing their $1billion loan to us and it's clear that what they'd most like is to simply pull it."[244]

f. In an email dated September 5, 2007 from Paul Friedman to Samuel Molinaro and others regarding funding, Friedman notes, "I sat with the Repo Desk this afternoon and, after much painful discussion, **came up with a list of customers who we are going to tell to take their repo business elsewhere. We will be doing irreparable harm to valuable and longstanding customer relationships but we can't take the risk that our funding goes away, leaving us with obligations to fund and no money... How then do I reconcile this with what the Equity Division is doing? They are pounding the pavement looking for new Prime Brokerage customers . . . If their funding goes away - meaning that customer credit balances continue to be pulled from us - they plan to use the firm's $12 billion liquidity reserve. Why do they get to assume that will be available to backstop their activities? Don't we all work for the same firm?**"[245]

g. An email exchange dated October 4, 2007 between Paul Friedman, John Stacconi and others discusses Bear Stearns' TRS Financing and an attempt by a Bear Stearns' employee to reach out to a number of banks in order to secure

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[243] Email exchange dated August 17, 2007 between Paul Friedman and Patrick Lewis. (BEAR 01457344) (Ex. 41).
[244] Email dated August 20, 2007 from Paul Friedman to Richie Metrick and others. (BEAR00510868) (Ex. 38).
[245] Email dated September 5, 2007 from Paul Friedman to Samuel Molinaro and others, Subject: funding. (BEAR 01463408) (Ex. 42).

additional funds.[246] Sal Dimaggio states that "[t]he first thought that comes to mind is why is this not better coordinated especially since the banks mentioned all have been approached. The anz mention of another bear area already talking to them is me. **Some banks have started to express concern that too many areas of bear are reaching out for liquidity.**" Paul Friedman states that **"[t]he corporate guys were told last month that because they hadn't negotiated any term fundings and were 'tying up the firm's equity repo lines' (that's a quote) that they had to liquidate positions, an action that cost them millions.**" Stacconi responds that "I don't know David Carlson but I assume that he's a very busy employee. **The fact that he spent time calling major banking relationships looking for funding seems like an incredible waste of time. A five minute phone call to Treasury could have provided him with all the information that he received on the credit appetite of all those banks to Bear with the exception of MBIA and GS… But before they take things into their own hands, maybe they should spend a little time understanding what we're doing now and with whom before going off and shooting blanks all over the street and making us look dysfunctional to some of our largest lenders.**"

h. An email exchange dated October 15, 2007 between Victor Bulzacchelli, Paul Friedman, and others discusses a $100 billion Treasury initiated fund.[247] Bulzacchelli states that "**[w]e are liquidity challenged – swapping one illiquid for another seems unproductive for us.**" Friedman responds that "Treasury has told the banks who will be providing the liquidity that if they have to actually take on the new CP that will be eligible at the window. Since only banks can go to the Window we can't go with this stuff even if it's eligible. Can we use CTC? Maybe. But we'd have to pump in lots more capital it could have such a concentrated position."

i. In an email dated December 3, 2007 from Paul Friedman to Thomas Marano and others, Friedman notes that "**We are starting to see some significant pullback in funding and have lost close to $2 billion in cash today**. Most significant was WestLB which pulled back $500mm (directly related to their taking their SIV's on balance sheet) and Northern Trust Securities Lending which pulled back $1 billion of whole loan money (also for reasons of liquidity unrelated to us). **It's getting ugly out there.**"[248]

[246] Email exchange dated October 4, 2007 between Paul Friedman, John Stacconi and others, Subject: TRS Financing Project. (BEAR 01364717-20) (Ex. 43).
[247] Email exchange dated October 15, 2007 between Victor Bulzacchelli, Paul Friedman, and others, Subject: Who is looking into participation in the $100 Bil Treasury in[iti]ated fund? (BEAR 01469125-7) (Ex. 44).
[248] Email dated December 3, 2007 from Paul Friedman to Thomas Marano and others, Subject: Funding Alert. (BEAR 01474778) (Ex. 45).

j. In an email dated December 15, 2007 from Paul Friedman to Thomas Marano discussing Bear Stearns' funding, Friedman states that "**Moody's is almost certain to downgrade us...It is unlikely – but hardly impossible - that S&P will downgrade us for second time**... If they do, they'll take our long-term rating to A- and our short-term rating to A-2. **At that level we are effectively out of business. No one will buy our commercial paper at A-2 and it's also unlikely that any bank will be willing to roll our unsecured bank loans so the $10 billion of funding from those 2 sources disappears overnight... since we already have firms refusing our name and many more will refuse us then. Either way we're dead, whether from lack of cash or lack of customers.** Sam is sure we can convince S&P not to take action so let's assume he's probably right and put the probability of S&P downgrading us this week at 10%. Thus, there's a 10% chance that if we do nothing we're out of business inside a month." [249]

Friedman continues by warning that "What happens if Sam is right and we don't get downgraded this week? When we announce our big loss on Thursday, our equity will drop by 10%... **This will take our leverage to over 33 times, way higher than our peers and the highest we've been since the mid-'90's. To have any remote chance of not getting downgraded by both agencies next quarter, we'll have to bring our leverage back in line to something like 26-28 times... meaning that our balance sheet has to be around $325-350 billion. To do that we'll have to shed an additional $50 billion or so of assets at whatever fire sale prices we can get... we'll be in the same panic sell mode that we were in during the late summer - only worse...** It's true that **even if we raised a couple of billion dollars of new equity we'd still have all the funding and liquidity issues we have now. Raising new capital won't fix the world around us.** But the point that gets lost is that if we don't do it we won't be here when the world gets back to normal."[250]

k. An email dated December 18, 2007 from Thomas Marano to Alan Schwartz discusses a draft press release, which is included as an attachment, regarding reorganizations at Bear Stearns.[251] The draft press release states, "there are several reasons why we must focus on raising outside capital asap. Our traditional model of aggregating assets for distribution via securitization is

[249] Email dated December 15, 2007 from Paul Friedman to Thomas Marano, Subject: MortgageCo. (BEAR 01309416-8) (Ex. 46).
[250] *Id.*
[251] Email dated December 18, 2007 from Thomas Marano to Alan Schwartz, Subject: FW: Draft of what Alan and I talked about. (BEAR 01352592) (Ex. 47).; Draft Working Document, dated December 18, 2007. (BEAR 01352593-4) (Ex. 48).

currently broken... The trading desks [] are very constrained in their opportunity to serve customers because of a need to shrink balance sheet for fear of losing funding... We are not able to offer the full suite of repo financing to clients for fear of losing balance sheet issues. Clients are concerned about our potential down grade and lack of ability to commit capital to facilitate trades. **The repo desk is in a constant state of concern with respect to funding the firm. We have inadequate long term and short term financing facilities**...Our traditional sources of term funding are increasingly burdened by their own balance sheet. **We may have inadequate funding resources to address investment in technology for risk management and reporting of positions.**"[252]

l. In an email dated February 9, 2008 from Thomas Marano to Paul Friedman, Marano states that "[s]ome of us are trying to operate like we have a business ... **If between this and the Option one trade we get neither approved it will reinforce my suspicion that this place is done because mgt will not allow us to operate any form of business since we really do not have the capital they tell us is plentiful. They are not thinking about the possibility that holding assets in some cases is wiser than selling (capital again needed).** Over the next few months as I accumulate more examples of lack of ability to try and do business it will make me feel better about a final decision when I make one. Not a threat, not angry, just a rational process by a guy who wants to keep trying until the patient is beyond repair. For me mentally its sort of like a prisoner that goes through the motions of pilates and and prayer to occupy his time until the sentence is up or somebody pardons him."[253]

174. Bear Stearns failed to disclose to investors that it was losing its sources of short-term secured financing in the fall of 2007 and the spring of 2008, as indicated by the following emails:

a. In an email exchange dated August 11, 2007 between Samuel Molinaro, Robert Upton, John Stacconi and others, Stacconi comments on a potential deal with Teachers Reinsurance, stating that "**I wasn't an advocate of another deal at current market levels because of the signal it would send to market about our liquidity. But after a week of being denied additional credit by our banks and actually losing credit at the margin, I**

[252] Draft Working Document, dated December 18, 2007. (BEAR 01352593) (Ex. 48).
[253] Email dated February 9, 2008 from Thomas Marano to Paul Friedman, Subject: Draft Executive Committee Memo on GMAC-UK Transactions. (BEAR00314343-5) (Ex. 49).

think we should tee this up."[254] Upton responds, **"[f]or the reasons cited below AND the need to raise cash capital, we should seriously consider doing the 3 year without regard to the 5 year buyers."**

b. In an email dated August 14, 2007 from Sal Dimaggio to Samuel Molinaro, Dimaggio expresses his concerns about Bear Stearns' funding situation.[255] Dimaggio notes that "**so far we have lost $6.6 billion of repo funding, desk anticipates losing $2.75 billion more in the next month.**"

c. An email dated September 24, 2007 from Michael Moriarty to Samuel Molinaro and Alan Schwartz discusses a trade counterparty that had expressed concern following the collapse of the BSAM hedge funds.[256] Moriarty relays a client's concerns explaining that "one of the largest and longest running client in Structured Funds... **has expressed concern over Bear's credit for the past two months and in addition to myself and team, I have put Sam and Minikes on the phone with him and his people. His concerns are continuing, and I would like to arrange a visit with the four of us I think a face-to-face would be helpful in reducing the risk that [he] decides to pull the trade.**"

d. An email dated November 30, 2007 from Barry Cohen to Elizabeth Ventura and Samuel Molinaro explains Cohen's valuation of Bear Stearns' stock and its sensitivity to the value of the assets on Bear Stearns' balance sheet as of the end of the 3rd quarter of 2007.[257] Cohen, among other things, explains that his calculations imply that "there are $2,737 of assets per share of BSC stock. **I figure that our book value, after our write-off is about $85 per share.** I also assume that we would be in some state of distress (downgrades etc.) if we had to write off $50 per share. **This is ~2% of our assets. If you assume that 98% of our assets stay flat, but 2% go to zero, we may be out of business,...** For this reason, **I don't focus on the good assets we have. I focus on our worst assets, because a tiny percentage of bad assets can sink us. I take comfort from our $18B in cash, but that is only 4.5% of our assets. Even if we had 10 times that amount of cash, a small percentage of bad assets would kill us...** To me, this paints an extremely gloomy picture. Even if we are confident of the underlying value of our

[254] Email exchange dated August 11, 2007 between Samuel Molinaro, Robert Upton, John Stacconi and others, Subject: Teachers Reinsurance. (BEAR00804364-5) (Ex. 36).
[255] Email dated August 14, 2007 from Sal Dimaggio to Samuel Molinaro, Subject: Funding Situation.xls. (BEAR00509006) (Ex. 37).
[256] Email dated September 24, 2007 from Michael Moriarty to Samuel Molinaro and Alan Schwartz, Subject: Structured Funds trade with Thomas H Lee (Blue Star). (BEAR 01352373) (Ex. 50).
[257] Email dated November 30, 2007 from Barry Cohen to Elizabeth Ventura and Samuel Molinaro, Subject: My analysis of BSC stock. (BEAR 01174575) (Ex. 51).

holdings, the liquidity problems in the market could cause them to trade much lower."

e. In an email dated January 8, 2008 from Samuel Molinaro to Alan Schwartz, Molinaro notes that JPMorgan "**has notified us that they backing out of our 4 bill[ion] secured/unsecured backstop facility**."[258]

f. An email dated February 12, 2008 from Thomas Marano to Alan Schwartz, discusses Bear Stearns' possible fund for Cerberus.[259] Marano expresses his concern that while Bear Stearns "should push for higher rates," **the Company needs to be "careful because it's not clear this is really the right cost of funds and we could be transmitting an indication of how distressed we are as a firm which could spil[l] in to market and make our problems turn in to a death spiral**."

g. An email dated February 24, 2008 from Thomas Marano to other employees discusses Bear Stearns' risk limit violations as of February 21, 2008 and risk limit levels going forward.[260] In the email, Marano states that "I want each of you to review your max and operating violations. By Tuesday at 11 am… **I want all of you in my office to discuss when you will be under your max limit violations as well as new proposed limits for 2008 which will have to be lower than most existing limits due to lack of liquidity and higher funding costs**."

h. An email exchange dated April 19-20, 2007 between Ralph Cioffi, Steve Van Solkema, Stuart Rothenberg, and others discusses Bear Stearns' CPRCDR risk modeling.[261] Rothenberg states "when running deals through CPRCDR, **let's keep our results internal**. If the banker wants feedback, just indicate we need more subordination or we are concerned about some names in the portfolio. **We don't want to be telling the street about our results.** When I was talking with Ralph this evening, he just wanted to be sure that our analysis remained internal." Solkema responds that he was "**[o]ne thousand percent in agreement, and let's also try to get in the habit of calling it our 'credit model' or something generic rather than cprcdr**. Dealers could try

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[258] Email dated January 8, 2008 from Samuel Molinaro to Alan Schwartz. (BEAR00128463) (Ex. 52).
[259] Email dated February 12, 2008 from Thomas Marano to Alan Schwartz and Ritchie Metrick, Subject: Cerberus. (BEAR00316832-3) (Ex. 53).
[260] Email dated February 24, 2008 from Thomas Marano to other employees, Subject: FW: Risk Limit Violations as of 02/21/08 (1) Max Limit Violations and (0) Operating Limit Violations. (BEAR00325452) (Ex. 54).
[261] Email exchange dated April 19-20, 2007 between Ralph Cioffi, Steven Van Solkema, Stuart Rothenberg, and others, Subject: CPRCDR results. (BS-SEC3769041-2) (Ex. 55).

to arb our model…" Ralph Cioffi also replies "**[c]orrect from now on for outside consumption it's the credit model.**"

i. An email dated April 22, 2007 from Matthew Tannin to Ralph Cioffi (via the Hotmail account of Ralph Cioffi's wife) discusses the performance of the BSAM funds.[262] Tannin concludes that "we have two basic options: Close the two HG funds now - or get very very aggressive.... **There are now a few reasons to close the Funds now. The sub-prime market looks pretty damn ugly. CPR/CDR tells us we are looking at major write-downs across the board. If we believe the runs Steve has been doing are ANYWHERE CLOSE to accurate I think we should close the Funds now.** The reason for this is that **if CPR/CDR is correct then the entire sub-prime market is toast…** If AAA bonds are systematically downgraded then there is simply no way for us to make money -- ever." Tannin also wonders, "Who do we talk to about this? Rich Marin? Warren? Outside counsel? (And here we have to be very careful because our outside counsel is BSAM's counsel NOT our counsel -- this is another very big issue we at least need to think about."

j. In an email dated March 10, 2008 from Russell Sherman to Alan Schwartz and Samuel Molinaro, Sherman states, "I wanted you to take a look at the two attached documents. One is an internal memo regarding today's activity; the other is a press release. **We are a little reluctant to put out the release because we do not want to create another headline. We have already publicly issued a statement to all the media outlets saying that there is no truth to the liquidity rumors.**"[263]

175. Alan Schwartz allegedly made material misstatements on the morning of March 12, 2008 when he spoke publicly and assured investors that Bear Stearns had no liquidity issues.[264] In particular, during his appearance on CNBC, Alan Schwartz commented on Bear Stearns' liquidity telling investors that "our liquidity position has not changed at all. The balance sheet hasn't weakened at all…As the year has gone on since year-end,

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[262] Email dated April 22, 2007 from Matthew Tannin to Ralph Cioffi (via the Hotmail account of Ralph Cioffi's wife), Subject: Things to Think about – Parts I and II. (BEAR 01565503-6) (Ex. 56).
[263] Email dated March 10, 2008 from Russell Sherman to Alan Schwartz and Samuel Molinaro, Subject: Memo and Release. (BEAR00282771) (Ex. 57).
[264] Transcript from Alan Schwartz's appearance on CNBC's Squawk on the Street, dated March 12, 2008 at 9:06AM. (BEAR00283872-3) (Ex. 58).

that liquidity cushion has been unchanged… We don't see any pressure on our liquidity, let alone a liquidity crisis."[265]

176. At the time, however, Bear Stearns was bleeding free cash balances, and it was losing its sources of short-term secured financing both at rapid rates.[266] Internal emails reveal that Bear Stearns had been experiencing liquidity problems and that Alan Schwartz was aware of these problems:

a. In an email dated March 10, 2008 from Samuel Molinaro to Alan Schwartz, Molinaro states that "[w]e put the release and internal statement out ... **Repo we are losing from today should be replaced with available capacity in the morning and no net negative impact. We briefed the SEC tonight on liquidity etc. ... One big fire drill.**"[267]

b. In an email exchange dated March 11, 2008 between Russell Sherman and Samuel Molinaro, Sherman and Molinaro discuss a set of questions that Alan Schwartz would be asked during his appearance on CNBC. Questions include: "**There are rumors about liquidity problems at Bear Stearns? Do you have a liquidity crunch?;** "Your business model doesn't work; the franchise is broken."; Are you going to be indicted? How do you manage the lawsuits that are out there?"; **When we first spoke you said we don't need capital for capital sake? Do you still feel that way?**"[268]

c. In emails dated March 12, 2008 between Samuel Molinaro and Michael Nirenberg, Nierenberg states that **it is "imperative that some type of press conference is held to dispel the rumors in the market.. . . need to try and**

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[265] Transcript from Alan Schwartz's appearance on CNBC's Squawk on the Street, dated March 12, 2008 at 9:06AM. (BEAR00283872-3) (Ex. 58).

[266] *See, e.g.*: an email dated March 10, 2008 where John Stacconi tells Jeremy Hill and others that Rabobank had decided to pull their funding from Bear Stearns (BEAR 01128477) (Ex. 59); an email dated March 11, 2008 where Jon Ferber tells David Marren, Paul Friedman and others that Bear Stearns "was seeing several of the European liquidity providers pulling back this morning" (BEAR 00605879) (Ex. 60); emails dated March 12, 2008 between Paul Friedman and David Rawlings, where they discuss reaching out to certain lenders for additional funding, but Friedman worries that even making the call would "spook" those lenders and cause them to withdraw their existing balances (BEAR 00606589) (Ex. 61); emails dated March 13, 2008 between Dave Marren, Robert Schwartz, Paul Friedman and others, discussing a repo counterparty that was "pulling their $500 mil. of repo." (BEAR00606704) (Ex. 62).

[267] Email dated March 10, 2008 from Samuel Molinaro to Alan Schwartz. (BEAR 01115103) (Ex. 63).

[268] Emails dated March 11, 2008 between Samuel Molinaro and Russell Sherman. (BEAR 01115105) (Ex. 64).

put an end to the rumors before everyone cuts us off."[269]

d. An email dated March 13, 2008 between Robert Upton and Patrick Lewis indicates that, through March 12, 2008, Bear Stearns' customers wired out a total of $7.8 billion.[270]

e. An email exchange dated March 13, 2008 between Paul Friedman, Matthew Chasin and others discusses whether Bear Stearns should seek financing from the Fed.[271] In the email, a person wrote "[d]o you guys think it is worth calling the Fed in the morning and see if they will lend to us against whole loans? The other alternative may be to ask a bank to go to the window with them. That will free up the cash against master note money which Treasury will need tomorrow. I know I'm reaching but I cannot think of another way to free up the unsecured money." Friedman replied that "Sam and [A]lan just finished an hour with the [F]ed. They don't plan to lend to us."

ii. Supporting Deposition Testimony from Former Bear Stearns Employees

177. Depositions conducted in late 2014 also revealed that, during the Relevant Period, key members of Bear Stearns' management were aware of Bear Stearns liquidity problems.

178. Deposition testimony of Paul Friedman,[272] who was in charge of Bear Stearns' Repo Desk during the Relevant Period, demonstrates that Bear Stearns was experiencing liquidity problems throughout that period of time. Specifically:

a. Friedman testified that he personally told Warren Spector that "there were liquidity issues" at the Bear Stearns-sponsored BSAM High Grade Funds, and that Bear Stearns "needed to find a solution."[273]

b. Friedman testified that the common thread between the collapse of the BSAM High Grade Funds and the collapse of Bear Stearns was a failure of liquidity.[274]

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[269] Emails dated March 12, 2008 between Samuel Molinaro and Michael Nirenberg. (BEAR 01115114) (Ex. 65).
[270] Email dated March 13, 2008 from Robert Upton to Patrick Lewis, Subject: Read: Total Customer Wires Out Through 3/12 = $7.8 billion. (BEAR00567802) (Ex. 66).
[271] Email exchange dated March 13, 2008 between Paul Friedman and Matthew Chasin and others, Subject: FED. (BEAR00606877) (Ex. 67).
[272] Deposition Testimony of Paul Friedman, December 5, 2014 (Ex. 18).
[273] *Id.*, 84:21-84:25 (Ex. 18).
[274] *Id.*, 154:12-154:15 (Ex. 18).

c. Friedman also testified that he had concerns that Bear Stearns would not have adequate funding "down the road," and that this concern was shared by other Bear Stearns employees, including Samuel Molinaro and Robert Upton.[275]

d. Friedman testified that, during March 2008, some of Bear Stearns' long-term lenders stopped providing repo financing to Bear Stearns and some lenders were no longer willing to roll over Bear Stearns' unsecured debt.[276]

179. Deposition testimony of Samuel Molinaro,[277] Bear Stearns' CFO during the Relevant Period, demonstrates that Bear Stearns was losing sources of funding and was experiencing liquidity problems throughout that period of time. Specifically (emphasis supplied):

a. Molinaro testified that he concluded that Bear Stearns needed to "create more liquidity ASAP" following the announcement that S&P would downgrade Bear Stearns' credit rating,[278] and also that he feared that a failure to do so could cause a "doomsday scenario [where] you get a hard [sic] mentality and you get a run on the bank"[279]

b. Molinaro testified that Bear Stearns lost "$6.6 billion of repo funding" following the S&P ratings downgrade,[280] and that "on balance, [Bear Stearns] lost balances" following the S&P ratings downgrade.[281]

c. Molinaro also testified that HSBC pulled all of its funding for Bear Stearns in early March 2008. [282]

d. Molinaro testified that during July 2007, there were concerns within Bear Stearns regarding the substantial loss of client balances.[283] In an email dated July 18, 2007, Michael Minikes expressed concern to Molinaro that "[w]e again risk losing substantial balances," referring to Vicis Capital's uneasiness over market conditions and the likelihood that they may move their balances or business elsewhere.[284] In another email dated July 20, 2007, Steven Meyer, who was in charge of the prime brokerage business, also expressed concerns over Bear Stearns' liquidity position. Specifically, regarding Vicis Capital, which was one of the first hedge funds who moved their balances

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275 *Id.*, 187:24-189:9 (Ex. 18).
276 *Id.*, 132:21-133:3 and 156:5-156:9 (Ex. 18).
277 Deposition Testimony of Samuel Molinaro, December 4, 2014 (Ex. 5).
278 *Id.*, 168:15-169:16 (Ex. 5).
279 *Id.*, 171:18-172:3 (Ex. 5).
280 *Id.*, 185:16-186:9 (Ex. 5).
281 *Id.*, 192:25-193:13 (Ex. 5).
282 *Id.*, 226:2-226:23 (Ex. 5).
283 *Id.*, 138:21-140:21 (Ex. 5).
284 Email dated July 18, 2007 from Michael Minikes to Samuel Molinaro. (BEAR00501435-6) (Ex. 68).

away from Bear Stearns, Meyer expressed his concerns "that the issues that Vicis has raised are echoed throughout [sic] a number of our [prime brokerage] customers." Meyer also stated that "[t]here is still significant concern over the riskiness over the $1.4 billion repo line to the fund and this gives [brokerage clients] a reason to question our judgment and risk management practices… The impact of the [hedge funds] problem on [the prime brokerage business] is very significant."[285]

When asked if the problems with the hedge funds had a significant impact on the prime brokerage business, Molinaro testified that the "BSAM funds getting in trouble ended up… in a period of time when the markets were beginning to become quite stressed, ended up putting us in the headlines of the newspapers for days on end… and led us to have to deal with rumors and innuendo that were in the market..." Molinaro stated that the BSAM problems were "reputationally damaging" for Bear Stearns.[286]

e. Bear Stearns' liquidity problems were exacerbated in early August when S&P lowered its outlook for Bear Stearns to negative on August 3, 2007. Samuel Molinaro sent an email on August 3, 2007 to Michael Minikes, stating that "[w]e need to create more liquidity asap. Worried about free credits."[287] Regarding this email, Molinaro testified that he was "telling [Michael] that we were going to go through a very stressful period… and we were going to need to raise liquidity in the short run because we were likely going to have customers who would look to move free credit balances, basically people who say, let's move the money now and we will figure it out later, type of folks, and I was concerned about this report. Principally, because we read it, it's not that bad, but I knew we were in a very stressful period in the marketplace and **my feeling was even an outlook change at this point from a rating agency would be perceived by investors extremely negative** as though S&P knew something that we didn't know."[288]

180. Deposition testimony of Alan Schwartz,[289] formerly Bear Stearns' President and Chief Executive Officer, demonstrates that Bear Stearns had significant turnover in its funding sources in the period preceding its collapse, and that Bear Stearns would have needed up to $25 billion in additional liquidity to meet the redemption requests the firm experienced in the week of March 13, 2008. Specifically:

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285 Email dated July 20, 2007 from Steven Meyer to Warren Spector and Samuel Molinaro. (BEAR00117203) (Ex. 69).

286 Deposition Testimony of Samuel Molinaro, December 4, 2014, 145:2-146:7 (Ex. 5).

287 Email dated August 3, 2007 from Samuel Molinaro to Michael Minikes. (BEAR00505732) (Ex. 34).

288 Deposition Testimony of Samuel Molinaro, December 4, 2014, 170:2-170:20 (Ex. 5).

289 Deposition Testimony of Alan Schwartz, taken December 9, 2014 (Ex. 70).

a. Schwartz testified that Bear Stearns had "a lot of turnover" in its lenders in "late summer and into the fall of '07[.]"[290]

b. Schwartz also testified that he was aware of and had heard rumors regarding Bear Stearns' liquidity in March 2008, and that he appeared on CNBC on March 12, 2008 to "quell the rumors that we'd had a bad first quarter[.]"[291]

c. Schwartz testified that Bear Stearns paid out more than $3 billion in disputed margin calls on March 12, 2008.[292]

d. Schwartz testified that early in the afternoon of March 13, 2008 he was informed that "all of a sudden balances were being withdrawn at a rapid rate and repo lenders were withdrawing their loans against our collateral[,]"[293] and that he was told that "the amounts being withdrawn would make it impossible for us to fund our balance sheet."[294]

e. Schwartz testified that Bear Stearns determined on March 13, 2008 that it would need a credit facility of "around 25 billion" dollars to meet the demands of customers and lenders,[295] and also that in his view the "25 billion [] would have been represented probably what we would need, assuming that -- I was just putting an order of magnitude on what might have been gone, plus, as you say, what we might have needed to stabilize the market, in which case, the repo market could open back up if we announced we had that."[296]

iii. Report Issued by the SEC's Office of Inspector General

181. The 2008 OIG Report explained Bear Stearns' liquidity problems and inadequate capital reserves during 2007 and 2008:[297] Among its conclusions, that report noted that (emphasis supplied):

a. "[I]n November 2006, Bear Stearns initiated a plan to increase its availability of secured funding at the holding company level. One component of this plan involved a tri-party repurchase agreement with secured lenders, giving Bear Stearns access to $1 to $1.5 billion from each lender. Bear Stearns' secured borrowings were initially for terms of 30 days, with the goal of extending the terms to six months to one year. By May 2007, Bear Stearns' short-term borrowing was 60 percent secured and by September 2007, it was 74 percent

[290] *Id.*, 132:8-132:10 (Ex. 70).
[291] *Id.*, 111:6-112:6 (Ex. 70).
[292] *Id.*, 123:18-124:16 (Ex. 70).
[293] *Id.*, 129:20-130:19 (Ex. 70).
[294] *Id.*, 133:5-133:8 (Ex. 70).
[295] *Id.*, 133:14- 133:17 (Ex. 70).
[296] *Id.*, 136:19-137:17 (Ex. 70).
[297] *See* 2008 OIG Report (Ex. 8).

secured. Finally, by March 2008, Bear Stearns' short-term borrowing was 83 percent secured. Nevertheless, Bear Stearns was still unable to obtain adequate secured funding to save the firm in March 2008. **Bear Stearns' increasing reliance on secured funding indicates that, although it appeared to be compliant with the CSE program's capital requirement, the market did not perceive it to be sufficiently capitalized to justify extensive unsecured lending. In this sense, Bear Stearns was not adequately capitalized**."[298]

b. The 2008 OIG Report opined on Bear Stearns' excessive leverage and highly concentrated business model, stating that "Bear Stearns' was highly leveraged with large exposure (i.e., concentration of assets) in mortgage-backed securities, Bear Stearns also had less capital and was less diversified than several of the CSE firms."[299]

c. The 2008 OIG Report raised concerns about the sufficiency of Bear Stearns' capital and its excessive leverage, noting that "**some individuals have speculated that Bear Stearns' would not have collapsed if it had more capital than was required by the CSE program**. In fact, a former Director of TM has stated: The losses incurred by Bear Stearns and other large broker-dealers were not caused by 'rumors' or a 'crisis of confidence,' but rather by inadequate net capital and the lack of constraints on the incurring of debt."[300] The lack of additional capital resulted in leverage remaining very high and its capital ratio declining to 11.5 percent from 21.4 percent between April 2006 and March 2008.[301] A perception that Bear Stearns had insufficient capital and excessive leverage could impair its access to repurchase financing by raising concerns that Bear Stearns was too risky a borrower.

d. The 2008 OIG Report explained that as the financial crisis developed, Bear Stearns' cost of unsecured financing increased dramatically.[302] The report cited the increase in the yield spread of Bear Stearns' outstanding bonds as an example of this increase in the cost of funding, stating that "by March 2008, a ten-year bond which had recently been issued at a spread of 362 basis points over Treasury rates were trading at 460 basis points over Treasury rates. The high spread indicated that market participants believed that Bear Stearns'

[298] *Id.*, pp. 12-13 (Ex. 8).
[299] *Id.*, p. 5 (Ex. 8).
[300] *Id.*, p. 11, citing Pickard Lee, American Banker, "SEC's [Commission] Old Capital Approach Was Tried-and-True," August 8, 2008 (Ex. 8).
[301] *Id.*, p. 12 (Ex. 8).
[302] *Id.*, p. 11 (Ex. 8).

creditworthiness was deteriorating."[303] Likewise, Bear Stearns' rating downgrades indicated that the rating agencies also believed Bear Stearns' creditworthiness was deteriorating. Bear Stearns' high and increasing cost of financing would tend to undermine the viability of Bear Stearns' business model, which was built on leverage.[304]

182. In sum, Bear Stearns employees' internal email communications, deposition testimony from former Bear Stearns employees, the 2008 OIG Report, and Bear Stearns' public statements regarding its liquidity in 2007 and 2008 all support the allegation that Bear Stearns' public statements regarding its liquidity and capital reserves were false and misleading, because Bear Stearns' liquidity and capital reserves were not adequate to support its operations. Moreover, these materials also show that Bear Stearns experienced worsening liquidity strains from mid-2007 until the Company collapsed in March 2008.

183. The foregoing list of misrepresentations and omissions by defendants (e.g., in paragraphs 161, 167, 182) is not intended to be exhaustive.

VII. Loss Causation Analysis for Information Leakage During the Relevant Period and the Corrective Disclosures on the Disclosure Dates at the End of the Relevant Period

184. I performed a "loss causation" analysis, which consists of two parts. First, I investigated the possibility of leakage of Bear Stearns' alleged fraud-related information during the Relevant Period to determine whether a statistically significant portion of the decline in Bear Stearns' share price during any such leakage period could reasonably be attributed to Bear Stearns' alleged fraud-related information leaking into the market for Bear Stearns' common stock. Second, I analyzed whether statistically significant abnormal

303 *Id.*, p. 11 (Ex. 8).
304 *Id.*, pp. 11-12 (Ex. 8).

returns on Bear Stearns' common stock on the Disclosure Dates immediately following the disclosure of the alleged fraud could be attributed to the respective corrective disclosures.

185. It is my conclusion that both factors contributed to the losses suffered by Plaintiff Bruce S. Sherman as a direct result of Bear Stearns' alleged fraudulent acts and omissions. Bear Stearns' alleged fraud-related information leaked into the market between December 20, 2007 and March 13, 2008. This information leakage partially revealed the alleged fraud, which was fully revealed when the additional information regarding the alleged fraud was disclosed on the two Disclosure Dates. My reasons for this conclusion follow.

A. Information Leakage

186. The damages per share on the disclosure dates are calculated based on a company's stock price reaction attributable to the disclosure of the alleged fraud. Typically, the corrective disclosures of misrepresentations or omissions occur in a series of corrective statements or revelations of truth, rather than in one distinct statement or revelation.

187. In addition, information regarding the alleged fraud can leak into the market over time before the final corrective disclosures are announced. When there is information leakage into the market in connection with the alleged fraud, the damages amount estimated based on the event study for corrective disclosure dates alone will understate the impact of the disclosures on the company's stock price. The amount of damages is understated because, by the time the corrective disclosures are announced, a portion of the impact of the alleged fraud contained in the announcement would already be reflected in the current stock price due to leakage.

188. Bradford Cornell and R. Gregory Morgan address the issue concerning information

leakage in their 1990 research article in the *UCLA Law Review* ("Cornell and Morgan (1990)").[305] Cornell and Morgan (1990) state that "[t]his prior information leak means that the difference between the predicted return and the actual return, commonly called the residual return, does not properly measure the economic impact of the disclosure."[306] The article provides an example to illustrate how the leakage of information into the market can take place, noting that "a slow flow of increasingly negative news fueled a rising tide of doubts and rumors."[307]

189. In order to reduce any potential underestimation of damages, one could increase the number of disclosure dates by including a period prior to the final corrective disclosure dates. Cornell and Morgan (1990) suggest that, instead of using the predicted return on the disclosure dates alone, one could substitute the predicted returns for the actual returns on the stock during a suitably chosen observation window. This window, they suggest, "begins far enough in advance of the disclosure for the analyst to be reasonably confident that no significant information leakage has occurred" and "ends at a date when the analyst feels confident that most of the information is publically available."[308]

190. Generally, loss causation analysis is performed during the information leakage period based on the "backwardation" method. The "backwardation" method typically adjusts for market-wide and industry-wide effects by taking the final market share price after the corrective disclosures have all occurred and then back-casting this price based on a regression model incorporating the market-wide and industry-wide returns based on an appropriate stock market index and an appropriate industry-wide stock price index,

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[305] Cornell, Bradford and R. Gregory Morgan, "Using Finance Theory to Measure Damages in Fraud on the Market Cases," *UCLA Law Review*, 37, 1990, pp. 883-924.
[306] *Id.*, p. 905.
[307] *Id.*, pp. 905-906.
[308] *Id.*, p. 906.

respectively.[309] In addition, it is very important to exclude company-specific information that is not related to the alleged fraud from the damage calculation. This exclusion can be accomplished by adjusting for economically significant (i.e., material) information unrelated to the alleged fraud when determining the position of the "value line," which shows the prices for the stock that would have prevailed but for the alleged fraud.

191. I have extended the comparable index approach described by Cornell and Morgan (1990) by incorporating into the analysis the stock market impact of firm-specific disclosures that are not related to the alleged fraud when I calculated the position of the "value line" each day. This adjustment properly excludes company-specific information unrelated to the alleged fraud from the damages calculation.[310]

B. Information Leakage during the Relevant Period

192. During the Relevant Period, information concerning Bear Stearns' liquidity problems, inadequate capital reserves, and the over-valued assets on its books started to leak into the market after the collapse of the two Bear Stearns Hedge Funds in June 2007. These problems had begun to develop by the summer of 2007. After Bear Stearns' earnings release on December 20, 2007, in which Bear Stearns announced the first quarterly loss in its history, these problems grew more severe, until Bear Stearns finally revealed the seriousness of its liquidity problems by announcing on March 14, 2008 that it would receive emergency financing from JPMorgan. The leakage of information resulted in

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[309] The method is applied using the *Modified Fama-French Three-Factor Model* that I utilized for the event-study in this expert report.

[310] The comparable index approach described in Cornell and Morgan does not adjust for company-specific announcements that are unrelated to the alleged fraud, which causes that approach to overstate the amount of inflation due to the fraud. *See* Cornell, Bradford and R. Gregory Morgan, "Using Finance Theory to Measure Damages in Fraud on the Market Cases," *UCLA Law Review*, 37, 1990, pp. 897-898. By adjusting as I have for the stock market impact of announcements that are unrelated to the alleged fraud, I have eliminated this source of potential bias in the share price inflation calculation. *Id.*, p. 903.

the market becoming increasingly aware of Bear Stearns' problems and increased concerns among investors during the Leakage Period.

i. Bear Stearns' Repo Financing

193. During the Relevant Period, Bear Stearns' heavy reliance on short-term repo financing – in particular, its failure to diversify its sources of funding – made it vulnerable to a loss of liquidity if participants in that market refused to lend to Bear Stearns. As discussed above, Bear Stearns greatly increased its use of repurchase financing between 2002 and 2007. (*See supra* Section VI.C.) This form of financing could dry up in periods of financial distress.[311] In addition, Bear Stearns' heavy reliance on short-term funding coupled with its very high financial leverage and the long duration of its assets created a serious asset-liability mismatch, which could expose the Company to the risk of financial failure.

194. Internal Bear Stearns' email communications among its employees and deposition testimony of Paul Friedman, who was in charge of Bear Stearns' Repo Desk during the Relevant Period, suggested that the Company was having difficulty keeping existing repo counterparties and finding new ones during the Leakage Period. (*See supra* Sections VI.A.vi and VI.A.vii.)

ii. Bear Stearns' Capital Adequacy

195. There was speculation in the market from time to time in the second half of 2007 and again in 2008 before Bear Stearns failed that Bear Stearns was going to raise more equity capital but it never did so.[312] The 2008 OIG Report explained that the lack of additional capital resulted in leverage remaining very high and Bear Stearns' capital

[311] Fitch Ratings, "Repo Markets, Shadow Banking Potential Liquidity Risks," March 19, 2012.
[312] 2008 OIG Report, p. 12 (Ex. 8).

ratio declining to 11.5 percent from 21.4 percent between April 2006 and March 2008.[313] In addition, the 2008 OIG Report stated that Bear Stearns' short-term secured borrowings increased significantly from 60 percent in May 2007 to 83 percent in March 2008.[314] A perception that Bear Stearns had insufficient capital and excessive leverage could impair its access to repurchase financing by raising concerns that Bear Stearns was too risky a borrower.

iii. Bear Stearns' High Leverage

196. Bear Stearns' high leverage increased its vulnerability to a loss of investor confidence because the high leverage could reduce its financial flexibility in times of market stress, increase its cost of borrowing during stressful periods, and ultimately impair its liquidity. The 2008 OIG Report concluded that "Bear Stearns was highly leveraged, with a gross leverage ratio of approximately 33 to 1 prior to its collapse. Leverage can affect liquidity risk… [L]everage amplifies funding liquidity risk… [I]f a firm experiences a lack of confidence, its liquidity can be adversely affected and that leverage can influence confidence levels. Thus, it is entirely possible that Bear Stearns' high leverage contributed to a lack of confidence in the firm (including unsubstantiated rumors) which had an impact on its collapse."[315] As the 2008 OIG Report concluded, Bear Stearns' high leverage and concentration in mortgages were among "numerous potential red flags prior to Bear Stearns' collapse."[316]

iv. Bear Stearns' Deficient Risk Management Practices

197. Bear Stearns' deficient risk management practices created a vulnerability that exposed

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[313] *Id.*, p. 12 (Ex. 8).
[314] *Id.*, p. 12 (Ex. 8).
[315] *Id.*, pp. 19-20 (Ex. 8).
[316] *Id.*, p. ix (Ex. 8).

Bear Stearns to the risk of collapse when market conditions deteriorated in 2006-2008. According to the 2008 OIG Report, "risk management of mortgages at Bear Stearns had numerous shortcomings, including lack of expertise by risk managers in mortgage-backed securities at various times; lack of timely formal review of mortgage models; persistent understaffing; a proximity of risk managers to traders suggesting a lack of independence; turnover of key personnel during times of crisis; and the inability or unwillingness to update models to reflect changing circumstances."[317]

198. More specifically, the 2008 OIG Report pointed out that "the amount of mortgage securities was occasionally well beyond Bear Stearns' internal limits," as Bear Stearns' risk management did not properly assess the extent of the Company's credit risk concentrations, how they were managed, and the extent of the Company's capital adequacy.[318] The OIG Report concluded that "Bear Stearns did not periodically evaluate its VaR models, or did it timely update inputs of its VaR models… Bear Stearns' model review process lacked coverage of mortgage-backed and other asset-backed securities,… [S]pikes in VaR resulted from disagreements between traders and risk managers concerning appropriate hedge ratios…Model Review at Bear Stearns was more of a support function and was less formalized than at other CSE firms… [T]he risk managers at Bear Stearns did not have the skill sets that best matched Bear Stearns' business model."[319]

199. The 2008 OIG Report also raised concerns about Bear Stearns' risk management personnel, stating that "Bear Stearns' head of model validation resigned around March 2007… At exactly this point of time, Bear Stearns had a tremendous need to rethink its

[317] *Id.*, p. 23 (Ex. 8).
[318] *Id.*, p. 18 (Ex. 8).
[319] *Id.*, pp. 20-22 (Ex. 8).

mortgage models and lacked key senior risk modelers to engage in this process… [T]he model review function was typically understaffed at Bear Stearns for much of 2007."[320]

v. Bear Stearns' Risk Management System Relating to the Two Bear Stearns Hedge Funds

200. Despite Bear Stearns' continued insistence in its public statements that Bear Stearns and the two Bear Stearns Hedge Funds had separate risk management systems, there was information available to market participants that would have suggested that the two failed Bear Stearns Hedge Funds had used Bear Stearns risk management systems and that the Bear Stearns and BSAM risk management departments had monitored the two hedge funds' investment positions.

201. For example, on June 22, 2007, in a conference call held subsequent to the collapse of the two Bear Stearns Hedge Funds, Samuel Molinaro stated that "[t]he asset management side and the broker-dealer side are very much separate. And of course, we have to have appropriate Chinese walls between the two parties and did so here. And these funds did operate independently of our mortgage department and our broker-dealer operations. Clearly, there are controls in place in the asset management side – did not – and obviously did not envision a market dislocation of this degree and this kind of a liquidity drain."[321]

202. In contrast to Samuel Molinaro's statements, a due diligence review of the Bear Stearns Hedge Funds published by The Alternative Investment Management Association Limited (AIMA) reported that, indeed, the two Bear Stearns Hedge Funds used Bear Stearns' trading and risk management systems (Bear Stearns' BondStudio analytical

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[320] *Id.*, pp. 22-23 (Ex. 8).
[321] Thomson StreetEvents, "Preliminary Transcript: BSC-Bear Stearns Comments on BSAM Structured Credit Strategies Funds," June 22, 2007.

system), that the Bear Stearns repo desk marked the two Bear Stearns Hedge Funds' investments to market, and that Bear Stearns' and BSAM's risk management departments monitored the two Bear Stearns Hedge Funds' investment positions.[322] Those market participants who had access to this report could have discovered information regarding Bear Stearns' own risk management systems and practices, which would have suggested that those systems and practices were, in fact, similar to those of the two Bear Stearns Hedge Funds that failed.

203. The 2008 OIG Report also concluded that, subsequent to this collapse of the two Bear Stearns Hedge Funds, "significant questions were raised about some of Bear Stearns' senior managements' lack of involvement in handling the crisis."[323]

204. Thus, the failure of the two Bear Stearns Hedge Funds had adverse implications for Bear Stearns, because it alerted the market to potential weaknesses in Bear Stearns' risk management systems.

vi. Bear Stearns' Mark-to-Market Disputes with its Counterparties

205. Serious mark-to-market disputes with major broker dealers would imply problems with Bear Stearns' valuation models, which is another source of vulnerability that could have undermined confidence in Bear Stearns as a repo counterparty. The 2008 OIG Report pointed out that, as the subprime crisis continued into the summer of 2007, mark disputes between Bear Stearns and its counterparties were becoming more common.[324] For example, in July 2007, Bear Stearns had mark disputes with two large dealers in

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[322] The Alternative Investment Management Association Limited (AIMA), "AIMA's illustrative questionnaire for Due Diligence of Bear Stearns High Grade Structured Credit Strategies Fund," May 1, 2006. (BEAR 01568638-59.) (Ex. 3). AIMA is the leading global hedge fund and alternative investment industry association and produces, among other things, a set of due diligence questionnaires for those who are investing in or servicing the hedge fund industry. According to AIMA, the questionnaires are available only to members and institutional investors through AIMA's confidential database.

[323] 2008 OIG Report, p. x (Ex. 8).

[324] *Id.*, pp. 27-28 (Ex. 8).

excess of $100 million each.[325] By March 2008, Bear Stearns' mark disputes involved even larger amounts.[326] Such disputes could also reduce the level of confidence that Bear Stearns' trading and repo counterparties had in its valuation models.

vii. Bear Stearns' Over-Exposure to Subprime Mortgages

206. The failure of the two Bear Stearns Hedge Funds was due largely to their over-exposure to subprime mortgage risk. That risk materialized when the subprime mortgage market started melting down in 2006. Bear Stearns did not provide adequate disclosure of its subprime mortgage risk in its 2006 annual report or its 2006 Form 10-K report or its other public disclosures, a fact noted in the 2007 SEC Letter (a comment letter the SEC sent to Bear Stearns regarding the Company's 2006 Form 10-K).[327]

207. Bear Stearns eventually filed a formal written response, in which it acknowledged certain inadequacies in the Company's disclosures in its 2006 Form 10-K and furnished considerable additional detail regarding the Company's subprime mortgage exposure.[328] That response, however, wasn't filed until *after* Bear Stearns had filed its Form 10-K for Fiscal Year 2007,[329] and the additional information that Bear Stearns disclosed in that response letter wasn't disclosed to the public until after Bear Stearns had collapsed.[330]

208. The OIG's expert opined that the information Bear Stearns disclosed in its response letter "would have been helpful to investors."[331] The 2008 OIG Report noted that, because the SEC's review process for Bear Stearns' 2006 Form 10-K was delayed and

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[325] *Id* (Ex. 8).
[326] *Id.*
[327] Letter from Samuel J. Molinaro to John Cash, Accounting Branch Chief of the United States Securities and Exchange Commission's Division of Corporate Finance, dated January 31, 2008, responding to the SEC comment letter dated September 27, 2007 sent regarding Bear Stearns' Form 10-K for the Fiscal Year Ended November 30, 2006 (DT_JK_000003592) (Ex. 7).
[328] *Id.*; *See also*, *supra*, Section VI.A.iii.
[329] *See*, *supra*, Section VI.A.iii.
[330] *See also*, *supra*, Section VI.A.iii.
[331] 2008 OIG Report, p. 45 (Ex. 8).

Bear Stearns' response to the 2007 SEC Letter was delayed as well, the Company missed "the opportunity to incorporate appropriate changes into its next year's 10-K filing."[332] The 2008 OIG Report concluded that "Bear Stearns' response letter contained material information that investors could have used to make well-informed investment decisions" and "the information (e.g. Bear Stearns' exposure to subprime mortgages) could have been potentially beneficial to dispel the rumors that led to Bear Stearns' collapse."[333]

209. This lack of disclosure created uncertainty about Bear Stearns' subprime exposure, which was fueled by Bear Stearns' huge asset write-down at the end of fiscal 2007. This uncertainty contributed to the perception of increased risk and intensified Bear Stearns' vulnerability to a loss of investor confidence.

viii. Market Reaction to the Leaked Information

210. Starting from mid-2007, credit market participants reacted to the information described above that was leaking into the market, as evidenced by the behavior of certain credit indicators for Bear Stearns. (*See* Attachment 29.) Starting from June 2007, Bear Stearns' 5-year CDS spread widened to 200 in November 2007. S&P downgraded Bear Stearns' long-term credit rating to 'A' from 'A+' effective on November 15, 2007, and Moody's downgraded Bear Stearns' long-term credit rating to 'A2' from 'A1' effective on December 20, 2007. Thereafter, Bear Stearns' 5-year CDS spread soared from 200 in November 2007 to 619 on March 10, 2008. Bear Stearns' 10-year bond credit spread (the difference between the yield to call of Bear Stearns' 10-year bond and the yield to maturity of a Treasury security maturing on the expected call date for the 10-year bond)

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332 *Id.* (Ex. 8).
333 *Id.*, pp. xi, 45 (Ex. 8).

also increased significantly from 1.4% in June 2007 to 6.4% in March 10, 2008. The decreases in Bear Stearns' bond and commercial paper ratings, the widening of Bear Stearns' CDS spreads, and the increases in the credit spreads of Bear Stearns' bonds are all indicative of decreasing creditworthiness and increased risk of financial distress.

211. These patterns of credit deterioration are all consistent with market participants reacting to the leakage of information concerning Bear Stearns' liquidity problems, which grew increasingly severe and eventually culminated in Bear Stearns failing in March 2008.[334]

212. Therefore, I determined conservatively that the leakage of information concerning Bear Stearns' deteriorating financial condition started on December 20, 2007.[335] It ended on March 13, 2008, right before Bear Stearns publicly effectively conceded its liquidity problems on March 14, 2007. Further discussion of information concerning Bear Stearns' deteriorating financial condition, which leaked into the market over the course of the Leakage Period, is presented below.

213. In order to perform the loss causation analysis for the Leakage Period and for the two Disclosure Dates, I calculated Bear Stearns' but-for common stock prices, which would have prevailed had the alleged fraud not occurred (the "but-for price line" or the "value line"). I utilized the "backwardation" method to calculate the but-for price line. During the Leakage Period, the calculation starts with the Bear Stearns share price at the end of the Leakage Period, and works backward day-by-day to the beginning of the Leakage Period.

214. I applied the "backwardation" method based on the regression model presented in the

[334] *Id.*, p. v (Ex. 8).

[335] I believe that my calculation of the stock market impact of the leakage of information regarding the alleged fraud is conservative because information could have leaked prior to December 20, 2007, for example, when the two Bear Stearns Hedge Funds failed and Bear Stearns subsequently experienced liquidity problems in the summer of 2007.

event study section of this expert report. As noted, the regression model I employed controlled for the impact of market-wide and industry-wide factors. In addition, I reviewed Bear Stearns-related news announcements on each day during the Leakage Period to identify any Bear Stearns-specific confounding news, that is, information unrelated to the alleged fraud.

215. Then I calculated the amount of "inflation" in Bear Stearns' stock price each day that is directly attributable to the alleged fraud. The daily inflation amounts are referred to as the inflation ribbon. The amount of inflation each day is calculated as the difference between the actual share price and the but-for share price for that day. There is zero inflation after the fraud has been fully disclosed to the market.

C. Loss Causation Analysis

i. December 20, 2007 through March 13, 2008

216. On Thursday, December 20, 2007, before the market opened, Bear Stearns released its earnings for the fiscal year and for the fourth quarter ended November 30, 2007.[336] Bear Stearns posted a fourth-quarter loss of $6.90 per share, which was its first loss as a public company. The loss was primarily driven by a write-down of $1.9 billion in the fourth quarter due to the decreased value of its mortgage-related assets. Because a significant loss by Bear Stearns had already been anticipated by investors, as had been reflected in its significant share price decline in November and December 2007, Bear Stearns' stock price reaction to the earnings release news on December 20, 2007 was somewhat muted.

217. Despite Bear Stearns' assurances to investors during its earnings conference call during market hours on December 20, 2007, in which the Company stated that it expected to

[336] Bloomberg L.P., "Bear Stearns Reports Full Year and Fourth Quarter 2007," December 20, 2007.

"begin 2008 as a stronger firm," Bear Stearns' problems, including lack of liquidity, overvaluation of its assets, and continuing loss of repurchase financing, persisted after the earnings release on that day.

218. On December 20, 2007, a Deutsche Bank securities analyst report raised a question about the larger-than-expected write-downs, noting that "since the company only had $800 million of subprime exposure remaining after it had announced $1.2 billion of writedowns... **we don't know why they had these additional write-downs.**"[337]

219. Deutsche Bank issued a subsequent analyst report on the same day stating that Bear Stearns' "Fixed income (ex-charges) declined from $800 mil.in 3Q07 to $400 mil. (2002 type level), **implying weakness beyond mortgages.**"[338]

220. Wachovia also issued a securities analyst report questioning Bear Stearns' public statement regarding its capital position. [339] The Wachovia report stated that "[t]he company indicated that its capital position was sufficient even before the investment from Citic. **We suspect it is from a regulatory standpoint but is likely not sufficient from industry competitive standpoint.**"

221. The next day, on Friday, December 21, 2007, UBS issued a securities analyst report, making comments similar to those in other securities analysts' reports.[340] UBS commented on Bear Stearns' decision not to raise capital and compared Bear Stearns' decision with its peers, noting that "Bear did not announce any capital raise (unlike MS [Morgan Stanley], C [Citigroup], and probably MER [Merrill Lynch]) as management

[337] Deutsche Bank, "More Broad Based Problems," December 20, 2007.
[338] Deutsche Bank, "Lowering estimates and price target," December 20, 2007.
[339] Wachovia, "BSC: A Year to Forget But Franchise Has Long Term Value," December 20, 2007.
[340] UBS, "Managing Through Tough Times," December 21, 2007.

feels the firm's capital ratios remain healthy."[341]

222. On the same day, rumors circulated in the market regarding Bear Stearns' deteriorating financial condition. During market hours, a CNBC commentator reported that "sources indicate BSC [Bear Stearns] in talks with Fortress for additional capital infusion."[342] Theflyonthewall.com also commented on the speculation that Bear Stearns might need additional capital and raised concerns about Bear Stearns' financial condition.[343] As a result of the rumors, among other news, Bear Stearns' common stock price declined significantly from $91.42 on December 20, 2007 to $89.95 on that day. The abnormal return of Bear Stearns' common stock on December 21, 2007 was -5.46%, which is statistically significant at the 1% level.

223. On January 8, 2008, when James Cayne, then Bear Stearns' CEO, stepped down as the CEO, Bear Stearns' risk management practices appeared to be in question. Punk Ziegel & Company commented on Bear Stearns' business model noting that Bear Stearns "focused its efforts too heavily on the mortgage and credit derivatives markets. Moreover, **it apparently never had an adequate risk management system in place**."[344] Accordingly, Punk Ziegel & Company lowered its price target for Bear Stearns to $67 from $94 and maintained its Sell rating. On January 8, 2008, Bear Stearns' common stock price closed at $71.17, a 6.66% decline from the previous day. The abnormal return on Bear Stearns' common stock on January 8, 2008 was -2.49%, which is statistically significant at the 1% level.

224. On January 9, 2008, in response to rumors concerning Bear Stearns' potential capital

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[341] *Id.*
[342] Bloomberg L.P., "BSC: Bear Stearns: CNBC commentator says sources indicate BSC in," December 21, 2007
[343] Bloomberg L.P., "Bear Stearns-BSC: Down on Spec," December 21, 2007.
[344] Punk Ziegel & Company, "Failed Business Model? Lowering Price Target to $67 from $94," January 8, 2008.

needs, Alan Schwartz, then Bear Stearns' new CEO, stated during a CNBC interview that there was no need to raise additional capital and that Bear Stearns was "adequately marked" to market on its investments and was "comfortable" with its position.[345] Bear Stearns' common stock price reacted to the statement and closed at $74.82, a 5.13% increase from the previous day.

225. The rumors regarding Bear Stearns' deteriorating financial condition persisted in February and March 2008. Punk Ziegel & Company issued a securities analyst report on February 8, 2008, after discussions with a number of market participants in the previous few days, that expressed concerns about Bear Stearns' funding strategies and the quality of the assets on its books.[346] Punk Ziegel & Company commented regarding Bear Stearns' capital that "the main strategy that is now being employed is to attract capital whenever possible so that questionable assets can be held on balance sheets as long as is necessary… The firm has shrunk its balance sheet by a moderate $28 billion, or 6.6%, in the past few quarters. **It has been working hard to shift its source of funding. In the past 12 months, the company has made extensive use of the repo markets here and abroad**… At the same time, the firm is marking down the value of its more questionable securities." Punk Ziegel & Company further commented regarding Bear Stearns' Level III assets, stating that "[i]n Level III there are no comparables. Therefore, the company is able to value the asset on a discounted cash flow basis. Since many of the assets in question are paying interest on a timely basis, **using this technique yields a higher valuation and a lower mark-down. Bear Stearns has increased its Level III asset by $7.9 billion in the past three months, or**

[345] Bloomberg L.P., "Bear Stearns CEO Says Firm Is Adequately Marked to Market," January 9, 2008.
[346] Punk, Ziegel & Company, "Bear Stearns (NYSE: BSC), Update Report – Price $80.79," February 8, 2008.

38.9%."

226. On February 12, 2008, Bear Stearns told investors that a hedge fund the Company was liquidating had decreased in value by 52.5% in 2007 after reducing the value of its assets.[347] Bear Stearns had already informed investors that this asset-backed securities fund had declined 22% in December 2007, in a letter it sent to investors on January 31, 2008. According to the letter, the fund's value fell due to the implementation of a new valuation technique, which based the valuation on the lowest price quote the fund obtained from banks and securities firms. Bear Stearns had previously used an average of quotes, which had resulted in wide price variations. While the spokeswoman at Bear Stearns noted that the fund was separate from the two Bear Stearns Hedge Funds that had failed in June 2007 because the "asset-backed pool did not rely on borrowed money to boosts its bets," the change in valuation technique would inevitably raise suspicions concerning the reliability of Bear Stearns' valuation models and risk controls.

227. On February 28, 2008, Deutsche Bank lowered its estimates for Bear Stearns' earnings for the first quarter 2008, fiscal year 2008, and fiscal year 2009 due to the greater than expected mark-to-market losses on leveraged loans and commercial real estate and the somewhat weaker investment fundamentals it perceived at Bear Stearns.[348]

228. Starting in early March 2008, rumors circulated in the market regarding Bear Stearns' weak financial situation, especially its perceived liquidity problems, valuation issues, and earnings decline. On March 10, 2008, Ace Greenberg, a former Bear Stearns CEO, denied these rumors regarding Bear Stearns' liquidity problems during an interview with

[347] Bloomberg L.P., "Bear Stearns Asset-Backed Hedge Fund Declined 52.5% in 2007," February 12, 2008.
[348] Deutsche Bank, "Lowering Estimates and Target," February 28, 2008.

CNBC, in which he called the rumor "ridiculous."[349] After Greenberg's CNBC interview, Bear Stearns' stock price dropped to $61.65 in the afternoon from $70.08 at the previous trading day's close.[350] Various news articles reported that Bear Stearns' stock price declined due to the "cash crunch rumors"[351] and that Bear Stearns' bond market valuations were also adversely affected by concerns over the adequacy of the Company's capital.[352] The option markets also reacted to the news. Bear Stearns' March options' implied volatilities reached 118%.[353] Other rumors included speculation that Wilbur Ross might make a capital infusion into Bear Stearns.[354]

229. Bloomberg news reported, after the market closed on March 10, 2008, that Bear Stearns' stock price fell 9.3%, the most since 1998, based on speculation over the Company's lack of sufficient access to capital,[355] despite Bear Stearns' denial of the market rumors regarding the Company's liquidity problems.

230. Bear Stearns' stock price continued to decline on March 11, 2008. Multiple news articles cited Punk Ziegel & Company's analysis asserting that Bear Stearns needed a new business model and that the Company would probably be forced to merge.[356]

231. The Buckingham Research Group issued an analyst report on March 11, 2008 regarding

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[349] Bloomberg L.P., "Bear Stearns Ex-Chairman Calls Rumors `Ridiculous,' CNBC Says," March 10, 2008.
[350] Bloomberg L.P., "MarketWatch: Bear Stearns shares fall 12% to $61.65," March 10, 2008.
[351] Bloomberg L.P., "HousingWire: Bear Stearns Drops on Cash Crunch Rumors" and "MarketWatch: Bear Stearns shares drop on liquidity concerns," March 10, 2008.
[352] Bloomberg L.P., "Bank, Broker Bond Risk Soars on Bear Stearns Capital Concerns" and "Treasuries Rally on Speculation Bear Stearns Lacks Capital," March 10, 2008.
[353] Bloomberg L.P., "Bear Stearns-BSC volatility off intra-day high," March 10, 2008.
[354] Bloomberg, L.P., "Bear Stearns-BSC volatility at 81 on credit risk, EPS & capital," March 10, 2008.
[355] Bloomberg, L.P., "Asia Day Ahead: Bear Stearns Declines on Liquidity Speculation," March 10, 2008.
[356] *See, e.g.*, Bloomberg, L.P., "BEAR STEARNS NEEDS NEW BUSINESS MODEL, SAYS PUNK ZIEGEL'S BOVE," "PUNK ZIEGEL'S BOVE CUTS BEAR STEARNS PRICE TARGET TO $45," "Bear Stearns Falls for Second Day on Cash Shortage Speculation," and "Bear Stearns Falls for Second Day on Cash Concerns (Update1)," March 11, 2008.

the rumors about Bear Stearns' liquidity problems.[357] It noted that "the stock traded down sharply yesterday in response to unsubstantiated rumors around the company having 'liquidity issues'... the rumor appeared to be intertwined with some disagreements over the value of collateral seized in the unwinding of Thornburg Mortgage and/or the hedge fund Peloton in London, to which Bear Stearns and 10+ other banks are lenders."[358]

232. In fact, Bear Stearns' management was aware that market participants were becoming increasingly concerned about Bear Stearns' liquidity and that those rumors could eventually put Bear Stearns out of business. The following Bear Stearns internal email communications show that Bear Stearns' management tried to calm market participants and regulators:

a. In an email dated March 10, 2008 from Russell Sherman to Samuel Molinaro and Alan Schwartz, Russell Sherman states "I wanted you to take a look at the two attached documents. One is an internal memo regarding today's activity; the other is a press release. **We are a little reluctant to put out the release because we do not want to create another headline. We have already publicly issued a statement to all the media outlets saying that there is no truth to the liquidity rumors.**"[359]

b. In an email dated March 10, 2008 from Jeff Farber to Michael Alix, Paul Friedman, and others, Jeff Farber notes that "**I received a call from Mike and Matt of the SEC this afternoon regarding rumors in the market and our current situation.** They have been getting pressure from the FSA in addition to others. **They would like to come in and discuss with us liquidity**, secured funding of less liquid assets, inventory valuation, and earnings."[360]

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[357] The Buckingham Research Group, "Bear Stearns (BSC), Liquidity Concerns Seem Overdone; But Lowering 1Q08 EPS On Continuing Mortgage Market Woes," March 11, 2008.
[358] *Id.*
[359] Email dated March 10, 2008 from Russell Sherman to Samuel Molinaro and Alan Schwartz, Subject: Memo and Release. (BEAR00282771) (Ex. 57).
[360] Email dated March 10, 2008 from Jeff Farber to Michael Alix, Paul Friedman and others. (BEAR 01126175) (Ex. 72).

c. In an email exchange dated March 11-12, 2008 between Samuel Molinaro, Michael Nirenberg, Alan Schwartz, and others, Michael Nierenberg states that " I feel **it is imperative that some type of press conference is held to dispel the rumors in the market... we need to try and put an end to the rumors before everyone cuts us off.** If we go another day, the market is going to kill us."[361]

233. Information regarding Bear Stearns' liquidity problems, its funding of illiquid assets, and internal valuation issues that leaked into the market during the period from December 20, 2007, through March 13, 2008 had a statistically significant negative impact on Bear Stearns' common stock price.

234. In order to measure the impact of only fraud-related rumors on Bear Stearns' common stock price during the Leakage Period, I calculated the but-for price line controlling for the market-wide and industry-wide effects and any Bear Stearns-specific news unrelated to the alleged fraud. To control for the market-wide and industry-wide effects, I used the *Modified Fama-French Three-Factor Model*, which I employed to perform the event study.[362] In addition, to control for any Bear Stearns-specific news unrelated to the alleged fraud, I have reviewed Bear Stearns-related news each day during the Leakage Period to determine whether a particular news item is related to the alleged fraud or not. (*See* Attachment 30.)

235. Attachment 31 presents the expected returns on Bear Stearns' common stock calculated from the regression model and the adjusted expected return accounting for any non-fraud-related news during the Leakage Period. Based on the adjusted expected returns, I back-casted the but-for prices for each day starting from March 13, 2008 through December 20, 2007. The amount of inflation each day is equal to the difference between

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[361] Email exchange dated March 11-12, 2008 between Samuel Molinaro, Michael Nirenberg, Alan Schwartz, and others. (BEAR 01115114) (Ex. 65).
[362] The regression model is explained in detail in Section V, *supra*.

the actual share price of Bear Stearns' common stock and the but-for price on that day. The but-for price line and the amount of the inflation per share each day during the Relevant Period are presented in Attachment 32 and Attachment 33, respectively.

236. The cumulative abnormal return (CAR) for the entire Leakage Period, that is, the portion of the decline in Bear Stearns' share price over the entire Leakage Period that is attributable to the leakage of information concerning the alleged fraud after controlling for market-wide and industry-wide factors and Company-specific information that is unrelated to the alleged fraud, is -25.71%, which is statistically significant at the 1% level. (*See* Attachment 34.)

237. Despite this leakage of information concerning Bear Stearns' liquidity problems and the over-valuation of its assets, primarily caused by its use of inadequate risk management models and practices, into the market during the Leakage Period, the defendants continued to deny that this information was true. However, as evidenced in numerous internal Bear Stearns emails, this information was, in fact, correct. Because the defendants continued to deny the truth regarding the information that had leaked into the market, the information that leaked during the Leakage Period only partially disclosed the alleged fraud; it did not remove all the inflation from Bear Stearns' common stock price. The full disclosure concerning Bear Stearns' liquidity problems and the over-valuation of its assets did not occur until the final Disclosure Dates.

ii. March 14, 2008

238. Shortly before the market opened on Friday, March 14, 2008, JPMorgan announced that it had agreed to provide emergency financing to Bear Stearns through the Federal

Reserve Bank's Discount Window.[363] The financing came in the form of a secured loan facility for an initial period of up to 28 days. Alan Schwartz, formerly Bear Stearns' President and CEO, stated publicly that, due to ongoing market rumors, "our liquidity position in the last 24 hours had significantly deteriorated."[364]

239. During a conference call held early in the afternoon that day, Alan Schwartz stated that "we decided to talk to JPMorgan and talk to them about providing a liquidity facility that would allow us to achieve the objective of calming down the marketplace and giving us a chance to get some facts out into the marketplace."[365] Samuel Molinaro also commented during the conference call that, "the facility that we are putting in place with JPMorgan will give us the ability to take that collateral and get it pledged and be able to borrow against it. As evidenced by Bear Stearns' conference call, Bear Stearns believed that this loan facility would provide the Company access to the liquidity it needed.[366] Alan Schwartz continued to insist that the Company's capital ratios remained "in good shape," but that the Company would be looking for alternative long-term sources of funding.

240. An email dated March 14, 2008 from David Schoenthal to Samuel Molinaro and others also indicates that Bear Stearns attempted to calm the investors and its counterparties.[367] In the email, an employee at Bear Stearns wrote that "the market must have clarification

[363] For an amount that was not disclosed until March 16, 2008, which consisted of a $30 billion secured loan facility.
[364] Bloomberg L.P., "Bear Stearns Agrees to Secured Loan Facility with JPMorgan Chase," March 14, 2008.
[365] "Bear Stearns -- Bear Stearns Conference Call to Address Speculation in the Marketplace," Thomson StreetEvents, March 14, 2008.
[366] Deposition testimony of Alan Schwartz, December 9, 2014, at 142:23-143:11 (Ex. 70) ("[T]here was an arrangement put together. It was put together as what we were told as a temporary bridge to buy time for a longer term solution . . . JPMorgan would, essentially, stand behind Bear Stearns' credit, and that we were told that we would have a period of up to 28 days, no more, to find a permanent solution.").
[367] Email dated March 14, 2008 from David Schoenthal to Samuel Molinaro and others, Subject: clarification on today's announcement. (BEAR00285142) (Ex. 73).

of what the Fed actions means as counterparts continue to pull lines… Our traders must feel comfortable that they can execute business and clients must understand that their positions and equity is secure."

241. Several securities analysts issued analyst reports the same day commenting on JPMorgan's agreement to provide emergency financing to Bear Stearns. Oppenheimer commented that "Bear Stearns is facing a crisis of liquidity and concerns of creditworthiness."[368] It opined on Bear Stearns' liquidity issues commenting that "**[t]he problem that Bear Stearns and other financials face is a great unwind of leverage**… When a company that is leveraged over 30-to-1 faces a crisis of liquidity and confidence of creditworthiness, that company will be unable to leverage its collateral and its leverage will be forced down to 1-to-1. Bear Stearns' equity could become worthless as forced sales create asset deflation, which could cause cannibalization of remaining capital… The great unwind of leverage that will occur will further depress the stock prices of financials."[369] Subsequently, Oppenheimer downgraded Bear Stearns to Underperform, explaining its rationale, "as this investment simply is mired in too much risk, even at these levels."[370]

242. In response to Bear Stearns' announcement regarding the financing agreement with JPMorgan, Credit Suisse also downgraded Bear Stearns' stock to Neutral from Outperform and reduced its price target for Bear Stearns' common stock to $35 from $100-110.[371]

243. In response to the announcement of the JPMorgan secured loan facility, rating agencies

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[368] Oppenheimer & Co. Inc., "Bear Stearns Cos the, Downgrading BSC Shares to Underperform from Perform," March 14, 2008.
[369] *Id.*
[370] *Id.*
[371] Credit Suisse Securities (USA) LLC, "Bear Stearns (BSC), Downgrade Rating," March 14, 2008.

also reduced Bear Stearns' credit rating. S&P downgraded its Bear Stearns credit rating to BBB from A.[372] Fitch Ratings downgraded its Bear Stearns long-term Issuer Default Rating and outstanding Bear Stearns credit ratings to 'BBB' from 'A+'.[373] Fitch Ratings expressed its concern that "[u]p until now, Fitch believed Bear Stearns had managed its balance sheet well through the ongoing credit stressed environment. **Bear Stearns suffered recent liquidity deterioration as credit risk re-pricing and declining business opportunities**... As a consequence, there has been a rapid decline in credit investor appetites which has dramatically impaired Bear Stearns' financial flexibility."[374]

244. Bear Stearns' share price continued to drop during the trading day on March 14, 2008, as investors reacted to the news regarding JPMorgan's secured loan facility. Bear Stearns' share price dropped 47.37% to $30.00 at Friday's market close from $57.00 at Thursday's market close.

245. I have reviewed the media databases on Bloomberg, Thomson Research, and other news sources for Bear Stearns-related news articles published after the market close on Thursday, March 13, 2008 through the market close on Friday, March 14, 2008. I did not find any additional notable news items regarding Bear Stearns that received any news coverage during that time period.

246. Therefore, the abnormal return on March 14, 2008, calculated based on the *Modified Fama-French Three-Factor Model*, including the percentage change in the Industry Index as an explanatory variable, is attributable to the disclosure of the alleged fraud.

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372 Bloomberg, "Bear Stearns Has Credit Ratings Slashed After Bailout (Update3)," March 14, 2008.
373 Bloomberg L.P., "Fitch Downgrades Bear Stearns to 'BBB'; Places Ratings on Watch Negative, March 14, 2008.
374 *Id.*

As noted earlier in this expert report, the abnormal return on March 14, 2008 resulting from the news announcements was -41.08%, which is statistically significant at the 1% level.

iii. March 16-17, 2008

247. Bear Stearns' management expected that the secured loan facility JPMorgan extended to Bear Stearns on March 14, 2008 would be sufficient to shore up Bear Stearns' liquidity, as evidenced by its conference call held early in the afternoon on March 14, 2008.[375] Alan Schwartz, formerly Bear Stearns' CEO, stated during the conference call that "we decided to talk to JPMorgan and talk to them about providing a liquidity facility that would allow us to achieve the objective of calming down the marketplace and giving us a chance to get some facts out into the marketplace."[376] Schwartz has also testified that "there was a general perception on the part of JPMorgan and the government that the announcement that JPMorgan would be standing behind Bear Stearns would calm the market[.]"[377] Samuel Molinaro, Bear Stearns' former CFO, also stated during the conference call that "the facility that we are putting in place with JPMorgan will give us the ability to take that collateral and get it pledged and be able to borrow against it."

248. Nevertheless, Bear Stearns management concluded Friday evening that Bear Stearns could no longer continue to operate on its own. After the market closed on Friday, March 14, 2008, a number of securities analysts and media outlets commented concerning the deal between Bear Stearns and JPMorgan, speculating about a potential JPMorgan buyout of Bear Stearns. For example, the *Financial Times* and the *Wall*

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[375] "Bear Stearns – Bear Stearns Conference Call to Address Speculation in the Marketplace," Thomson StreetEvents, March 14, 2008.
[376] Teleconference transcript of the Bear Stearns Business Update Call, March 14, 2008.
[377] Deposition testimony of Alan Schwartz, December 9, 2014, at 146:13-146:18 (Ex. 70).

Street Journal both reported that JPMorgan would rush to complete the deal to acquire Bear Stearns before the financial markets opened in Asia on Monday.[378]

249. On Sunday, March 16, 2008, Bear Stearns finally announced that it would be acquired by JPMorgan for $2.00 per share, or approximately $240 million.[379] During a subsequent conference call, Mike Cavanagh, JPMorgan's CFO, said that JPMorgan would guarantee the trading obligations of Bear Stearns effective immediately.[380] He predicted that the transaction would close in 90 days. In addition, JPMorgan reported that the Federal Reserve had agreed to provide a special non-recourse lending facility to JPMorgan for up to $30 billion secured by Bear Stearns' illiquid assets, consisting mainly of mortgage-related assets.[381]

250. In response to the news announcement that JPMorgan would acquire Bear Stearns, dozens of securities analysts issued analyst reports on March 17, 2008, commenting on JPMorgan's acquisition. A Buckingham Research Group report analyzed the problems Bear Stearns had faced and compared Bear Stearns' liquidity position to the liquidity positions of the other major securities broker-dealers.[382] The report distinguished Bear Stearns from the other major broker-dealers, explaining that "**total liquidity (cash, other liquid assets, and the borrowing value of unencumbered assets) at Bear Stearns was $35 billion. As a percentage of total assets, this was the lowest in the group at 9% and the only broker dealer to be below 10%**....Secondly,...**Bear Stearns had significant 'net' repo borrowing positions (repo financing minus repo**

[378] Bloomberg L.P., "JPMorgan Closer On Deal for Bear Stearns," March 16, 2008.
[379] Bloomberg L.P., "JPMorgan Chase to Acquire Bear Stearns," March 16, 2008.
[380] "JPM – JPMorgan Chase to Acquire Bear Stearns – Conference Call," Thomson StreetEvents, March 16, 2008.
[381] *Id.*
[382] The Buckingham Research Group, "Security Brokers, Evaluating Liquidity at the Rest of the Brokers in a "Run on the Bank" Scenario," March 17, 2008.

lending) of $74.5 billion – more than double its liquidity position...This mismatch put a significant strain on cash in the short-term as competitors terminated repos... **Bear Stearns was the only broker in a 'net borrower' position in terms of collateralized agreements**... Lastly, Bear Stearns' sizable prime brokerage business also contributed to its downfall... With gross payable of $87 billion and net payables of $35 billion, this was a sizable liability for an institution the size of Bear Stearns... In the end... **Bear Stearns liquidity risk planning was ill prepared for a once in a century 'run on the bank.**'"[383]

251. A Fox-Pitt Kelton report focused on the very low acquisition price per share, remarking that "[w]ith the deal price of $2/shr (vs Fri close of $30/shr), t**here is clearly hits to Bear Stearns' balance sheet and impairment not properly reflected.** We believe JPM derived the price via est'd further write-downs of leveraged loans, prime/alt-a, and CMBS (we can get to $4b) and deleveraging impact (nearly $6b), which leaves cushion of about $550m."[384]

252. Bear Stearns' share price opened at $3.89 on Monday, March 17, 2008 and exhibited high volatility in the morning as investors reacted to the news that Bear Stearns had agreed to be acquired by JPMorgan for just $2.00 per share. Bear Stearns' stock price trended slightly upward in the afternoon, although there was no other significant news regarding the Company. (*See* Attachment 35.)

253. Bear Stearns' share price dropped 83.97% to $4.81 per share at Monday's market close from $30.00 per share at Friday's market close. The higher-than-$2.00 closing price signaled that investors expected either that another acquirer willing to pay a higher price

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[383] *Id.*

[384] Fox-Pitt Kelton Cochran Caronia Waller (USA) LLC, "J.P. Morgan Chase, Annc'd BSC Deal Highlights Capital is King & JPM Has It," March 17, 2008.

would come forward or that JPMorgan would agree to raise its price. For instance, Fox-Pitt Kelton speculated in an analyst report that the market was pricing in possibilities of a higher bidder.[385] Eventually, JPMorgan agreed to raise the purchase price to $10.00 per share.[386]

254. The severity of the drop in Bear Stearns' common stock price from $30 at Friday's market close to $4.81 at the close on Monday, March 17, 2008 reflects the effect of the final disclosure of the severity of the liquidity problems that Bear Stearns had been experiencing, which it had tried to conceal from the market since at least the middle of 2007, as the remaining inflation due to the alleged fraud came out of the stock.

255. Some market commentators have blamed at least part of the drop in Bear Stearns' share price during the week of March 10-14, 2008 on a so-called "run on the bank."[387] Any such run was the foreseeable consequence of Bear Stearns' undisclosed liquidity problems, as information about them leaked into the market despite Bear Stearns' efforts to conceal them. The defendants could reasonably have foreseen that many of Bear Stearns' institutional clients would withdraw their free cash balances as information concerning Bear Stearns' liquidity problems leaked into the market and that the withdrawal of free cash balances would likely accelerate as institutions learned that other institutions had withdrawn their cash from Bear Stearns unless the liquidity

[385] Fox-Pitt Kelton Cochran Caronia Waller (USA) LLC, "BSC: Could Bear Get Another, Higher Bidder?" March 17, 2008.

[386] JPMorgan engaged in talks on Sunday, March 23, 2008, as it considered adjusting the price it would be willing to pay to acquire Bear Stearns. It was reported that JPMorgan would pay $10 a share for Bear Stearns "in an effort to pacify angry Bear Shareholders." JPMorgan subsequently stated that it had "intended to win over stockholders who vowed to fight the original fire-sale deal" when it had agreed to raise its price to buy Bear Stearns to $10 per share. *See* Bloomberg L.P., "JPMorgan in Negotiations to Raise Bear Stearns Bid," March 24, 2008; Bloomberg L.P., "JPMorgan May Raise Bear Stearns Bid to Woo Investors, NYT Says," March 24, 2008; and Bloomberg L.P., "Stocks Rise On Revised Bear Stearns Deal," March 24, 2008.

[387] Bloomberg L.P., "BSC: Bear Stearns: NY Times Deal Book discusses who could buy BS," March 14, 2008; Bloomberg L.P., "Bear Stearns Realized Need for Funding March 13, WSJ Says," March 15, 2008; and Bloomberg L.P., "European Banks Slump as JPMorgan Buys Bear Stearns (Update3)," March 17, 2008.

problems were corrected. Defendants could also have reasonably foreseen that these liquidity problems would eventually become a run on the bank when the severity of the undisclosed condition materialized, as it did on March 14 when it was disclosed that JPMorgan would extend a $30 billion secured loan facility to Bear Stearns to shore up Bear Stearns' liquidity.

256. The defendants have characterized the sequence of events during the week of March 10, 2008 as a 'run on the bank.' This characterization glosses over Bear Stearns' liquidity, valuation, and risk management issues that came to a head the week of March 10 and resulted in the Company's liquidity crisis, which, at the end, caused Bear Stearns to fail. As noted, it had been expected that the secured loan facility would shore up Bear Stearns' liquidity, and thus stabilize Bear Stearns' situation. Market participants did not know that this strategy had failed until it was announced on Sunday, March 16, 2008, that JPMorgan would buy Bear Stearns for just $2.00 per share. These developments and the so-called 'run on the bank' are all directly attributable to the market finally having discovered the severity of Bear Stearns' liquidity crisis.

257. The difference between Bear Stearns' closing share price of $30.00 on Friday, March 14, 2008 and the $2.00 price per share JPMorgan agreed to pay for Bear Stearns' common stock at least partly reflects Bear Stearns' weak negotiating leverage owing to its financial distress and the paucity of potential bidders for Bear Stearns during the weekend of March 15-16, 2008.[388] This weak-negotiating-leverage effect is a direct consequence of the materialization of Bear Stearns' liquidity problems because a highly leveraged and liquidity-strained financial institution is likely to find itself in a weak

[388] Credit Suisse Equity Research Analyst Report, "First Thoughts on JPM/BSC," March 16, 2008; and Punk, Ziegel and Company Financial Institutions Research Analyst Report, "Deals Done in Times of Panic Raise More Questions Than Answers," March 17, 2008.

negotiating position if its liquidity problems are revealed and it then attempts to find another institution to bail it out.[389]

258. Therefore, it is appropriate in my opinion to attribute the portion of the abnormal return on Bear Stearns' common stock on March 17, 2008 associated with the run-on-the-bank effect and the weak-negotiating-leverage effect to the alleged fraud and to include it in my damages calculation.

259. I have reviewed the media databases on Bloomberg, Thomson Research, and other news sources for Bear Stearns-related news articles published after the market close on Friday, March 14, 2008 through the market close on Monday, March 17, 2008. I did not find any additional notable news items regarding Bear Stearns other than JPMorgan's purchase of Bear Stearns for $2.00 per share that received any news coverage during that time period.

260. Therefore, the abnormal return on March 17, 2008, calculated based on the *Modified Fama-French Three-Factor Model*, including the percentage change in the Industry Index as an explanatory variable, is attributable to the alleged fraud. As noted earlier in this expert report, the abnormal return on March 17, 2008 resulting from the news announcements was -77.24%, which is statistically significant at the 1% level.

iv. Conclusions Based on the Loss Causation Analysis

261. I have drawn the following three conclusions based on my loss causation analysis:

   a. Bear Stearns' common stock price declined during the Leakage Period (between December 20, 2007 and March 13, 2008) when the truth regarding Bear Stearns leaked into the market, and also on the Disclosure Dates (March 14, 2008 and

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[389] Kirgis, Paul F., "Bargaining with Consequences: Leverage and Coercion in Negotiation," *Harvard Negotiation Law Review*, 19, Spring 2014 pages 69-128.

March 17, 2008), immediately following the public revelation of previously undisclosed facts regarding Bear Stearns, and those declines were statistically significant.

b. Bear Stearns' common stock price declines on the Effective Disclosure Dates were substantially caused by a series of revelations of the facts regarding Bear Stearns' risk management deficiencies and deteriorating financial condition, especially related to Bear Stearns' worsening liquidity situation.

c. The statistically significant abnormal returns on the Effective Disclosure Dates were not due to any macroeconomic factors, industry-specific factors, or non-fraud-related Bear Stearns news, but were substantially caused by revelations of the facts regarding Bear Stearns' risk management deficiencies and deteriorating financial condition, especially related to Bear Stearns' growing liquidity problems.

VIII. Calculation of Damages

A. Methodology for Calculating Damages per Share during the Relevant Period

262. Damages per share are calculated based on the difference between the actual security prices during the damage period and the security prices that would have prevailed had the alleged fraud not occurred (the "but-for price line" or the "value line") and the number of shares exposed to the alleged fraud.

263. The critical component of the damage calculation is the amount of "inflation" in the firm's share price each day that is directly attributable to the alleged fraud. As explained earlier in this expert report, the amount of inflation each day is calculated as the difference between the actual share price and the but-for share price for that day.

264. Information released into the market on the two Disclosure Dates and during the

Leakage Period corrected for the allegedly false statements that were made and the alleged material omissions that occurred during the Relevant Period. My damages calculation was performed based on the loss causation analysis presented in the previous section of this expert report. I calculated the amount of stock price inflation in Bear Stearns' common stock price during the Leakage Period, which extends from December 20, 2007 through March 13, 2008, and I also measured the effect of the revelation of the alleged fraud on the two Disclosure Dates, March 14, 2008, and March 17, 2008, based on the but-for price line I determined.

265. In order to determine the amount of inflation in Bear Stearns' common stock price during the Relevant Period, I adjusted the damages per share calculation to remove the effects of market-wide factors, industry-wide factors, and Bear Stearns' confounding news, that is, Bear Stearns-specific announcements of economically significant information that is unrelated to the alleged fraud. (*See* Attachment 31.) The but-for price line controls for all these factors.

266. Prior to the Leakage Period, I assumed that the amount of inflation per share is a constant dollar amount during each of the relevant time intervals during the Relevant Period. This method of damage calculation, which is often referred to as the constant dollar method, implies that there are no damages when shares are purchased and sold before the fraud is revealed (either through information leakage or a corrective disclosure), and by implication for the case of multiple disclosure dates, when the shares are purchased and sold between adjacent corrective disclosure dates. This method of calculation is consistent with the Supreme Court's decision on loss causation in Dura.[390]

[390] *Dura Pharm. v. Broudo*, 544 U.S. 336, 342 (2005).

Under the constant dollar method, each shareholder's damages per share are also capped at the actual per-share loss experienced by the shareholder if the decline in price per share experienced by the shareholder is less than the amount of inflation per share based on the disclosure dates involved.

B. Calculation of Damages per Share during the Relevant Period

267. Disclosure Date damages per share are calculated by multiplying the percentage abnormal rcturn attributable to the fraud (that is, after adjusting for any company-specific information unrelated to the alleged fraud) on the day the corrective disclosure is reflected in Bear Stearns' share price by the closing share price prior to the corrective disclosure. (*See* Attachment 34.)

268. During the Leakage Period (between December 20, 2007 and March 13, 2008) when information regarding Bear Stearns' deteriorating liquidity condition and valuation and risk management issues leaked into the market, as explained in the previous section of this expert report, I calculated the amount of inflation per share based on the but-for prices of Bear Stearns' common stock by applying the "backwardation" method.

269. Prior to December 20, 2007, to be conservative, I calculated inflation per share utilizing the constant dollar method. (*See* Attachments 31 through 33.)

270. For the Leakage Period, after adjusting for the market-wide and industry-wide effects and any Bear Stearns-specific information unrelated fraud, the cumulative abnormal return was -25.71%. (*See* Attachments 31 and 34.) The damage per share each day during the Leakage Period varies, ranging between $46.59 and $79.60 depending on the trading date. (*See* Attachment 31.)

271. For the Disclosure Date of March 14, 2008, the corrective disclosure occurred before the market opened on that day. Therefore, I used the closing price of Bear Stearns' common

stock of $57.00 on March 13, 2008 and the abnormal return of -41.08% on March 14, 2008, for the damages calculation. After adjusting for any Company-specific information unrelated to the alleged fraud, the resulting Disclosure Date damages per share for the March 14, 2008 corrective disclosure are $23.42. (*See* Attachment 34.)

272. For the Disclosure Date of March 17, 2008, the corrective disclosure occurred after normal trading hours on March 14, 2008. Therefore, I used the closing share price of $30 on March 14, 2008 and the abnormal return of -77.24% on the next trading day, March 17, 2008, for the damages calculation. After adjusting for any Company-specific information unrelated to the alleged fraud, the resulting Disclosure Date damages per share for the March 17, 2008 corrective disclosure are $23.17. (*See* Attachment 34.)

C. Calculation of Plaintiff Bruce S. Sherman's Aggregate Damages

273. Next, I calculated the aggregate damages for Mr. Sherman based on the dates and amounts of his purchases during the Relevant Period and his sales history concerning those shares of Bear Stearns common stock. Aggregate damages in fraud-on-the-market class action matters are a function of (1) the per-share price inflation that results from the alleged fraud and (2) the volume and timing of shares traded. The amount of per-share price inflation during the Relevant Period is presented in Attachment 31, and the volume and timing of the purchases and sales of the Bear Stearns shares that Mr. Sherman purchased during the Relevant Period are presented in Attachment 36 and Panel A of Attachment 37.

274. The aggregate damages on a certain day when Mr. Sherman purchased shares of Bear Stearns' common stock are the product of the number of shares he purchased and the per-share price inflation on that day. (See Attachment 37, Panel B.) The aggregate damages for the shares purchased that day are capped at the actual out-of-pocket loss,

which is the difference between the actual purchase price and the actual sale price, because an investor cannot be damaged by more than the actual realized loss on his investment.

275. In addition, I capped the damages amount based on The Private Securities Litigation Reform Act of 1995 (the "PSLRA") look-back restriction.[391] The PSLRA specifies a "look-back" provision, which caps the amount of damages when a firm's stock price rebounds within 90 days following the corrective disclosure. The applicable cap on damages depends on when the shares are sold. The loss cap equals the difference between the price paid for the shares and the average price during the period that begins on the corrective disclosure date and ends on the date of sale when shares are sold within 90 days of the corrective disclosure date. When they are sold 90 days or more beyond the corrective disclosure date, the loss cap equals the difference between the price paid and the average price during the 90 days following the corrective disclosure date.

276. Because Mr. Sherman sold all his Bear Stearns shares on March 19, 2008 when Bear Stearns' stock price rebounded to $5.23 from $4.81at the market close on March 17, 2008, I used the average closing share prices between March 17, 2008 and March 19, 2008, or $5.35 per share, in my damages calculation.

277. The aggregate damages for each day on which Mr. Sherman purchased shares of Bear Stearns common stock are shown in Panel B of Attachment 37. The aggregate damages for Mr. Sherman for the shares he purchased during the Relevant Period amount to approximately $13,147,777.

278. In addition, I have calculated prejudgment interest in the event that it is determined that Mr. Sherman is entitled to such interest. I have been advised by counsel concerning the

[391] Private Securities Litigation Reform Act of 1995, Pub. L. No. 104-67, 202 Stat. 737 (1995).

applicable statutory interest rates pursuant to New York state law.[392] The amount of prejudgment interest is calculated on the aggregate damages (before prejudgment interest) at 9% simple interest per annum between the date of purchase and the date of this expert report. (See Attachment 37, Panel C.) The aggregate amount of the prejudgment interest is equal to $8,685,378. Therefore, the aggregate damages, including prejudgment interest, for Mr. Sherman for the Bear Stearns shares he purchased during the Relevant Period amount to approximately $21,833,155. I reserve the right to update the prejudgment interest calculation through the date of judgment if requested by counsel.

IX. Conclusions

279. It is my opinion that the market for Bear Stearns' common stock was open, developed, and efficient during the Relevant Period.

280. This opinion is based on the common stock's high volume of trading, the large number of securities analysts following Bear Stearns and its common stock coupled with a regular flow of company-specific information, the presence of a large number of market makers, the substantial number of Bear Stearns' common shares held and traded by institutional investors, Bear Stearns' eligibility to file registration statements on Form S-3, the demonstrable cause-and-effect relationship between the release of Bear Stearns-specific news and the prompt price reactions of Bear Stearns' common stock price, Bear Stearns' large market capitalization and large public float, the fact that Bear Stearns'

[392] *See* N.Y. C.P.L.R. § 5001 ("[where] ... damages were incurred at various times, interest shall be computed upon each item from the date it was incurred or upon all of the damages from a single reasonable intermediate date," and that, "[interest] shall be at the rate of nine per centum per annum"); Mallis v. Bankers Trust Co., 717 F. 2d 683, 694-95 (2d Cir. 1983) (applying § 5001 and finding that plaintiffs bringing NY common law fraud claims were "entitled to prejudgment interest as a matter of right"). I have been advised by counsel that under federal law, the award of prejudgment interest is discretionary.

common stock traded on the highly liquid NYSE throughout the entire Relevant Period with reasonably sized bid-ask spreads, the stable relationship between Bear Stearns' common stock prices and the prices of the call options and the put options which conforms to put-call parity, and the evidence that Bear Stearns' common stock returns followed a random walk during the Relevant Period.

281. It is my opinion that Bear Stearns' common stock price declines during the Leakage Period (the period between December 20, 2007 and March 13, 2008), on March 14, 2008, and on March 17, 2008 were highly statistically significant, and that the stock market reactions on those dates were substantially caused by identifiable news events related to the disclosure of Bear Stearns' risk management deficiencies and liquidity and other, related financial problems. My opinion is based on the statistical significance of the negative abnormal returns on each of these days according to my event studies and my analysis of other company news, securities analysts' reports, and intra-day stock price movements.

282. It is also my opinion that the damages per share during the Leakage Period are between $46.59 and $79.60 depending on the trading date, the damage per share on March 14, 2008 is $23.42, and the damage per share on March 17, 2008 is $23.17.

283. It is also my opinion that the aggregate damages before prejudgment interest for Mr. Sherman for the shares of Bear Stearns common stock that he purchased during the Relevant Period amount to approximately $13,147,777, and the aggregate damages including prejudgement interest from the date of purchase to the date of this expert report amount to approximately $21,833,155.

284. My analysis is based on the materials I have reviewed to date. I reserve the right to amend my opinion and file a supplemental report in this matter should I obtain any other

significant information that leads me to change any of the opinions expressed in this expert report. To the extent this matter is adjourned for any reason, I further reserve the right to supplement this expert report.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

Executed: March 2, 2015

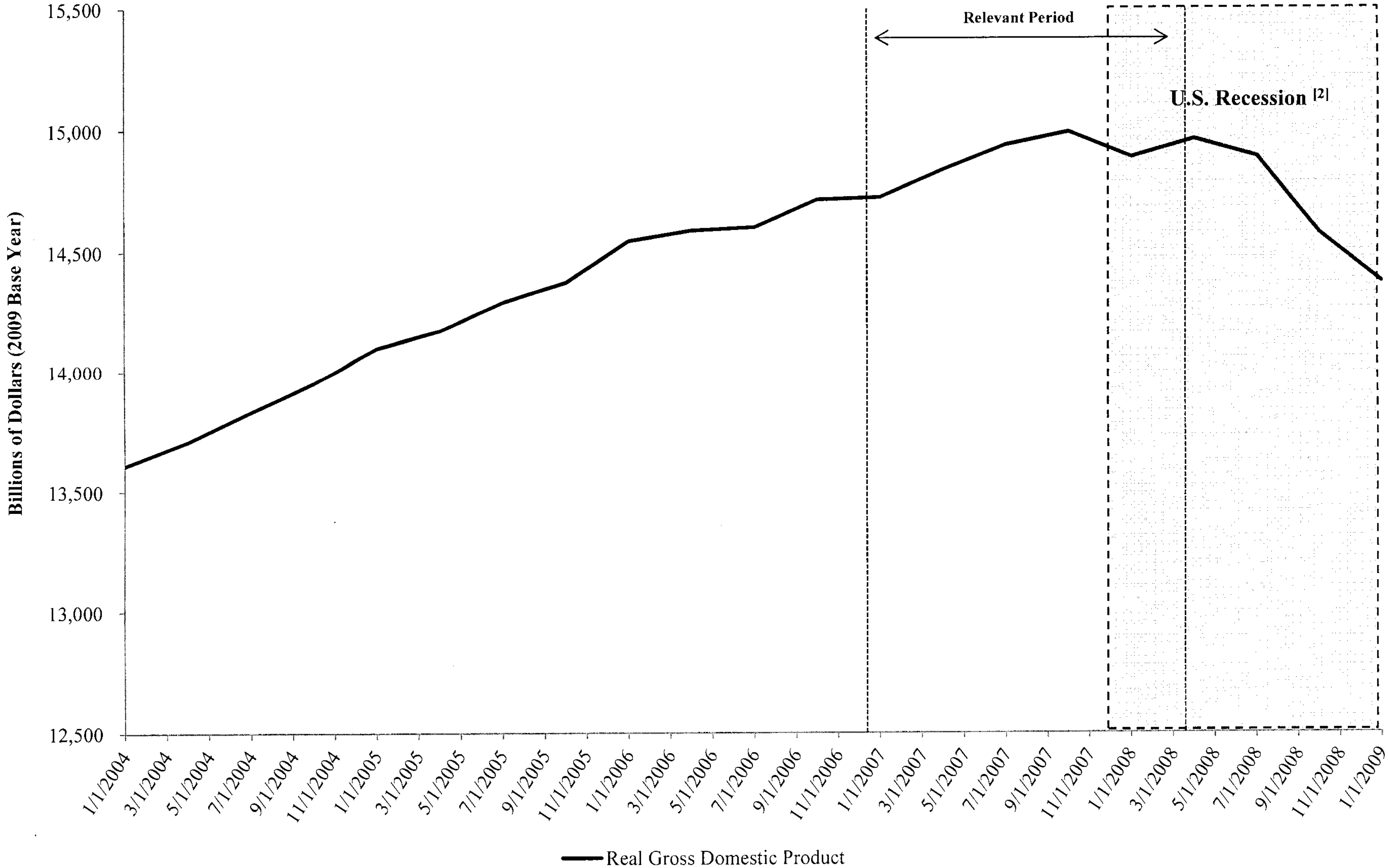
John D. Finnerty

John D. Finnerty, Ph.D.

Attachment 1

Bruce S. Sherman v. Bear Stearns Companies Inc., et al.

Real Gross Domestic Product (2009 Base Year), 2004 to 2008

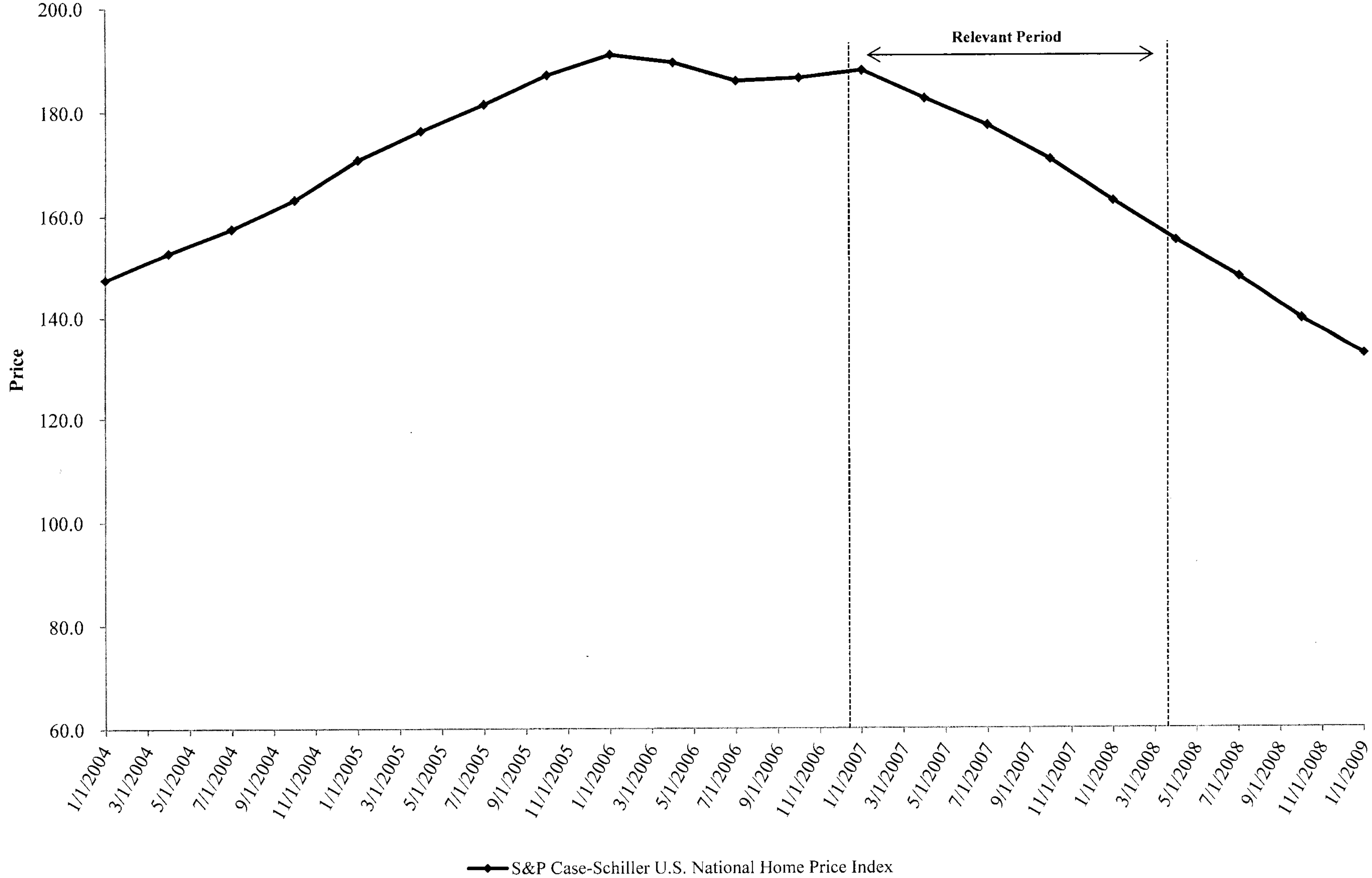


Sources:
[1] US. Bureau of Economic Analysis, *Real Gross Domestic Product, 3 Decimal*, Federal Reserve Bank of St. Louis https://research.stlouisfed.org/fred2/series/GDPC96/
[2] Recession begins from 2007-12-01 to 2009-06-01, *See:* NBER at http://research.stlouisfed.org/fred2/help-faq/#graph_recessions

Attachment 2

Bruce S. Sherman v. Bear Stearns Companies Inc., et al.

S&P Case-Schiller U.S. National Home Price Index, 2004 - 2008

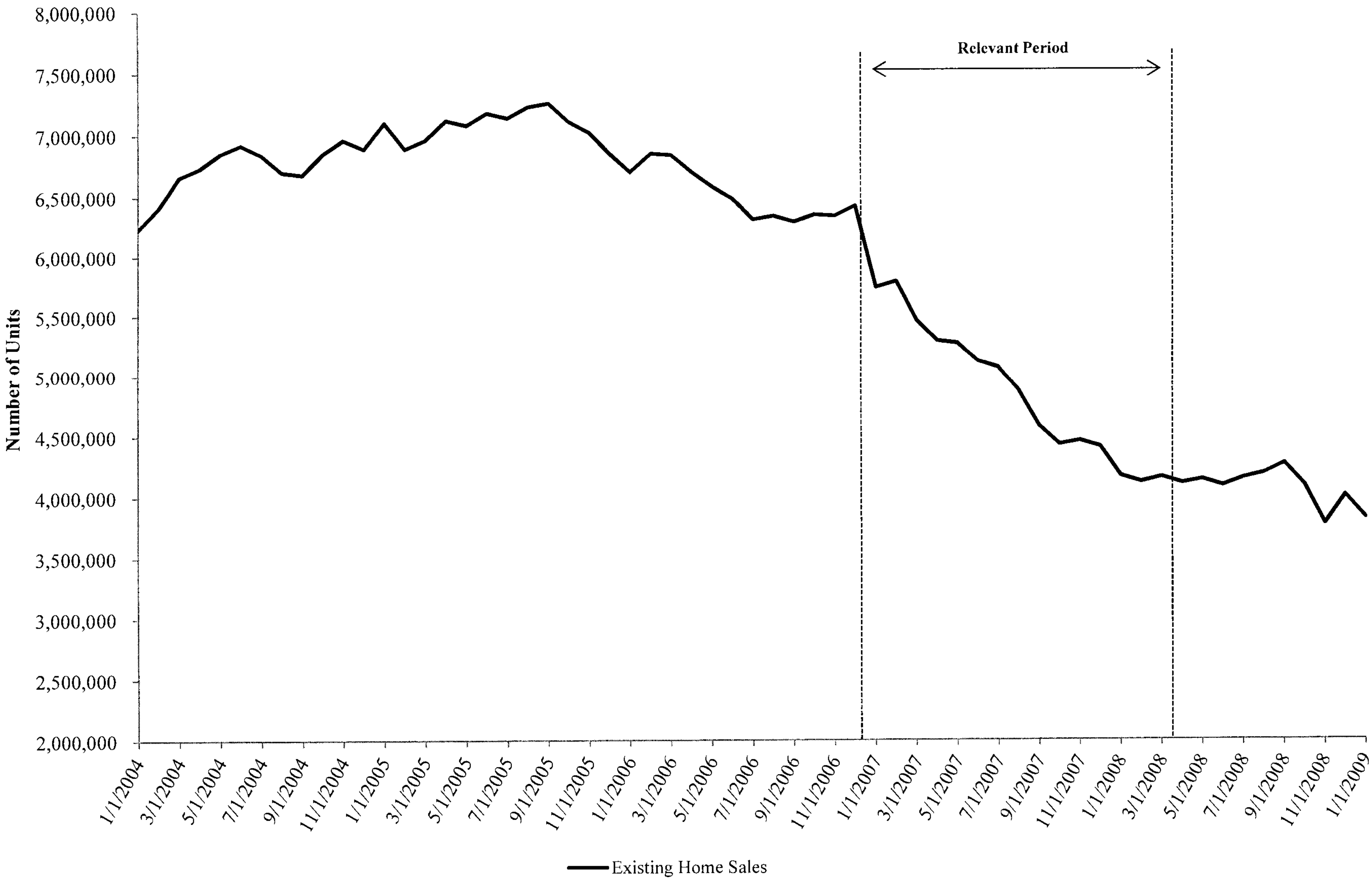


Sources: S&P Dow Jones Indices LLC, S&P/Case-Shiller U.S. National Home Price Index, Federal Reserve Bank of St. Louis https://research.stlouisfed.org/fred2/series/USCSCOMHPISA/.

Attachment 3
Bruce S. Sherman v. Bear Stearns Companies Inc., et al.
30 Year Term and 15 Year Term Fixed Rate Mortgage Interest Rate, 2004 to 2008

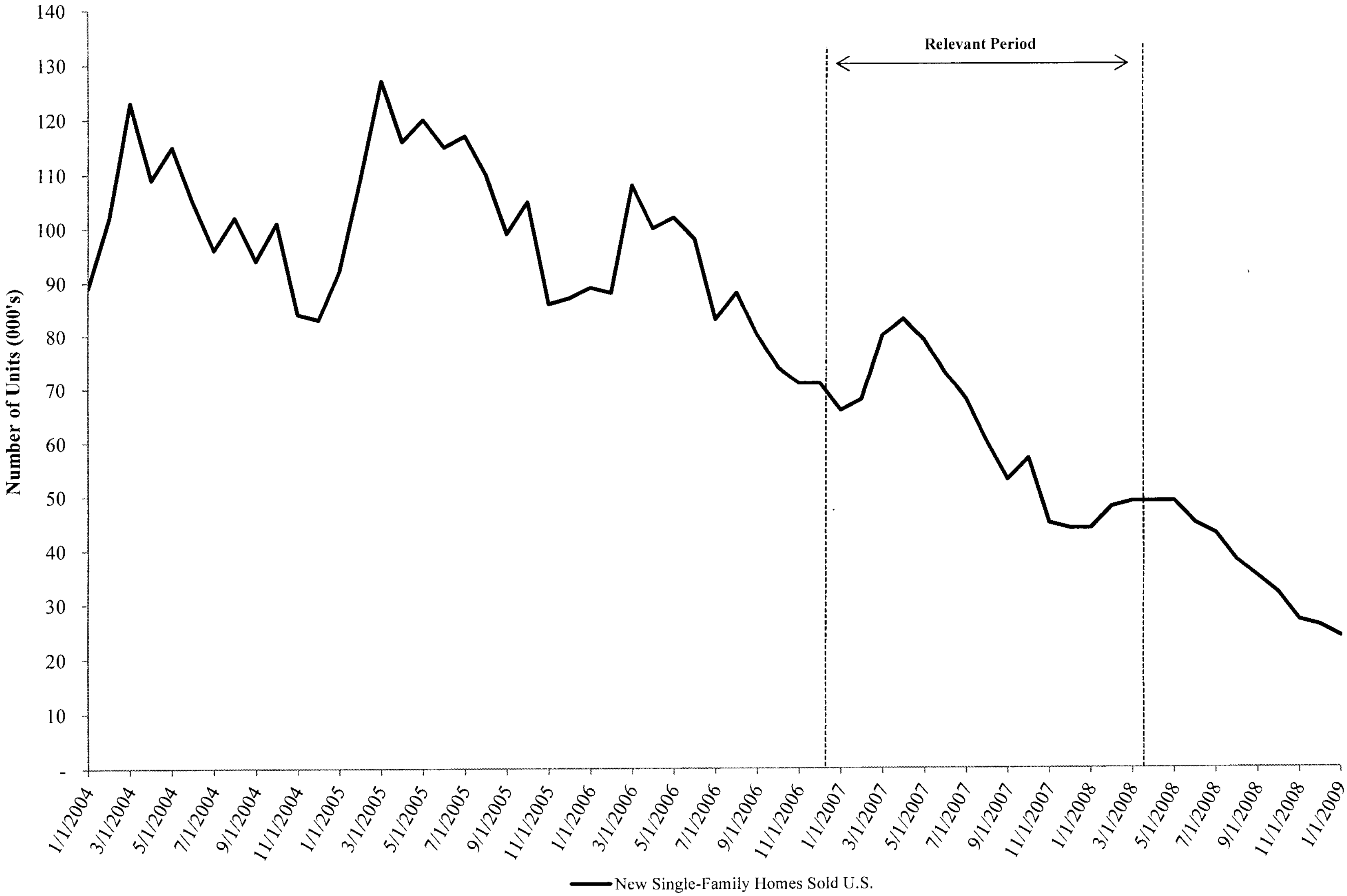
Sources: Freddie Mac, 30-Year Fixed Rate Mortgage Average in the United States, Federal Reserve Bank of St. Louis, https://research.stlouisfed.org/fred2/series/MORTGAGE30US/; and Freddie Mac, 15-Year Fixed Rate Mortgage Average in the United States, Federal Reserve Bank of St. Louis https://research.stlouisfed.org/fred2/series/MORTGAGE15US/.

Attachment 4
Bruce S. Sherman v. Bear Stearns Companies Inc., et al.
Existing Home Sales, 2004 to 2008



Source: National Association of Realtors, Existing Home Sales, Federal Reserve Bank of St. Louis https://research.stlouisfed.org/fred2/series/EXHOSLUSM495S/.

Attachment 5
Bruce S. Sherman v. Bear Stearns Companies Inc., et al.
New Single-Family Homes Sold, 2004 to 2008

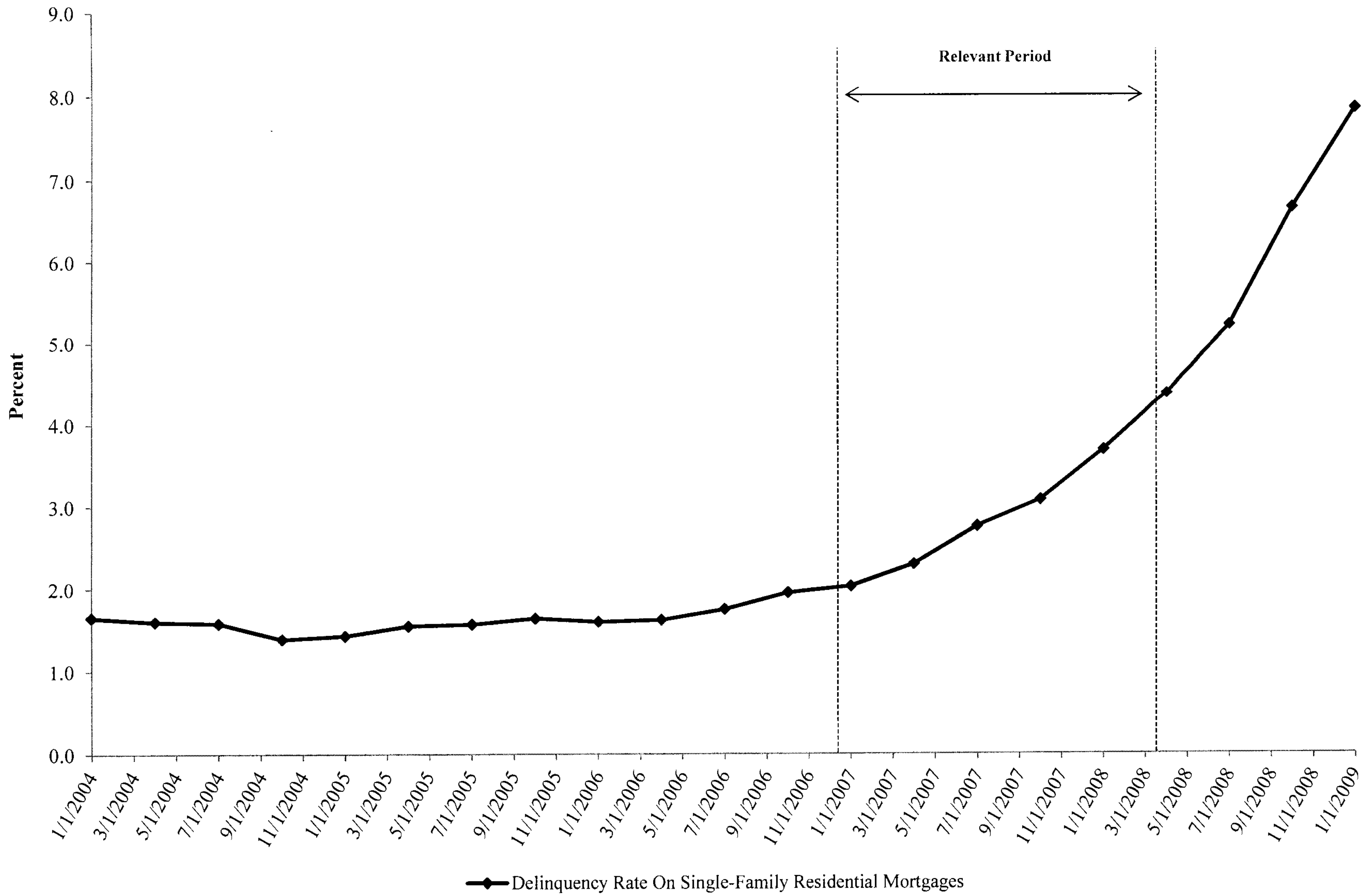


Source: US. Bureau of the Census, New One Family Houses Sold: United States, Federal Reserve Bank of St. Louis, https://research.stlouisfed.org/fred2/series/HSN1FNSA/.

Attachment 6

Bruce S. Sherman v. Bear Stearns Companies Inc., et al.

Delinquency Rate on Single-Family Residential Mortgages, Quarterly, 2004 to 2008



Source: Board of Governors of the Federal Reserve System (US), *Delinquency Rate On Single-Family Residential Mortgages, Booked In Domestic Offices, All Commercial Banks*, Federal Reserve Bank of St. Louis, https://research.stlouisfed.org/fred2/series/DRSFRMACBS/.

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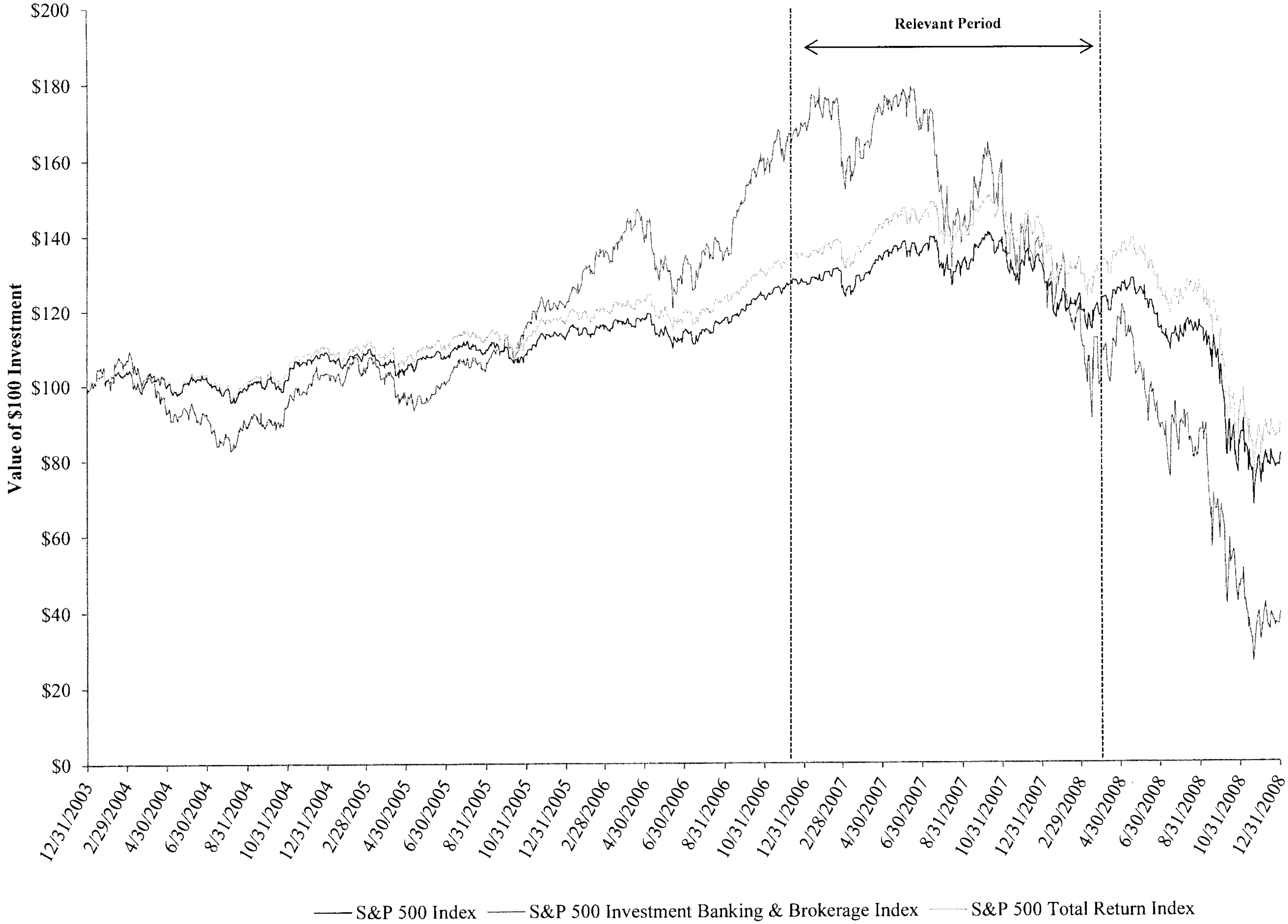
Attachment 7
Bruce S. Sherman v. Bear Stearns Companies Inc., et al.
Cumulative Return of Market Indices, 2004 to 2008



Source: Bloomberg L.P.

Attachment 8
Bruce S. Sherman v. Bear Stearns Companies Inc., et al.
Selected Financial Performance Data for The Bear Stearns Companies Inc., 2002 to 2007
($ Millions)

	2002	2003	2004	2005	2006	2007
Total Revenues	$ 6,891	$ 7,395	$ 8,422	$ 11,552	$ 16,551	$ 16,151
Annual Growth in Total Revenues	*-21%*	*7%*	*14%*	*37%*	*43%*	*-2%*
Revenues Net of Interest Expense [1]	$ 5,128	$ 5,994	$ 6,813	$ 7,411	$ 9,227	$ 5,945
Annual Growth in Revenues Net of Interest Expense	*5%*	*17%*	*14%*	*9%*	*25%*	*-36%*
Pre-tax Operating Income (Excl. Unusual Items)	$ 1,311	$ 1,772	$ 2,022	$ 2,207	$ 3,147	$ 3,128
Annual Growth in Pre-tax Operating Income	*29%*	*35%*	*14%*	*9%*	*43%*	*-1%*
Net Income	$ 878	$ 1,156	$ 1,345	$ 1,462	$ 2,054	$ 233
Annual Growth in Net Income	*42%*	*32%*	*16%*	*9%*	*40%*	*-89%*
Fully Diluted EPS	$ 6.47	$ 8.52	$ 9.76	$ 10.31	$ 14.28	$ 1.52
Annual Growth in Fully Diluted EPS	*50%*	*32%*	*15%*	*6%*	*38%*	*-89%*
Cash and Cash Equivalents	$ 5,520	$ 3,838	$ 4,173	$ 5,859	$ 4,595	$ 21,406
Annual Growth in Cash and Cash Equivalents	*-25%*	*-30%*	*9%*	*40%*	*-22%*	*366%*
Total Assets	$ 184,854	$ 212,168	$ 255,950	$ 287,293	$ 350,433	$ 395,362
Annual Growth in Total Assets	*0%*	*15%*	*21%*	*12%*	*22%*	*13%*
Unsecured Short-term Borrowings	N/A	$ 7,588	$ 11,727	$ 19,757	$ 25,787	$ 11,643
Changesin Unsecured Short-term Borrowings		*N/A*	*4,139*	*8,030*	*6,030*	*(14,144)*
Securities sold under Repurchase Agreements	$ 44,469	$ 47,464	$ 58,604	$ 66,132	$ 69,750	$ 102,373
Changes in Securities sold under Repurchase Agreements	*(5,666)*	*2,995*	*11,140*	*7,527*	*3,618*	*32,623*
Customer Payables	$ 53,814	$ 68,667	$ 79,384	$ 69,871	$ 72,989	$ 83,204
Changes in Customer Payables	*224*	*14,853*	*10,717*	*(9,513)*	*3,118*	*10,215*
Total Liabilities	$ 178,472	$ 204,698	$ 246,959	$ 276,501	$ 338,304	$ 383,569
Annual Growth in Total Liabilities	*-1%*	*15%*	*21%*	*12%*	*22%*	*13%*
Shareholders' Equity	$ 6,382	$ 7,470	$ 8,991	$ 10,791	$ 12,129	$ 11,793
Annual Growth in Shareholders' Equity	*13%*	*17%*	*20%*	*20%*	*12%*	*-3%*
Operating Cash Flow	$ (1,212)	$ (5,218)	$ (2,341)	$ (14,438)	$ (19,221)	$ 11,146
Annual Growth in Operating Cash Flow	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
Financing Cash Flow	$ (474)	$ 3,571	$ 2,805	$ 16,327	$ 18,138	$ 5,960
Annual Growth in Financing Cash Flow	*-69%*	*N/A*	*-21%*	*482%*	*11%*	*-67%*
Debt/Total Assets	52%	50%	52%	57%	59%	61%
Operating Cash Flow/Debt	-1%	-5%	-2%	-9%	-9%	5%

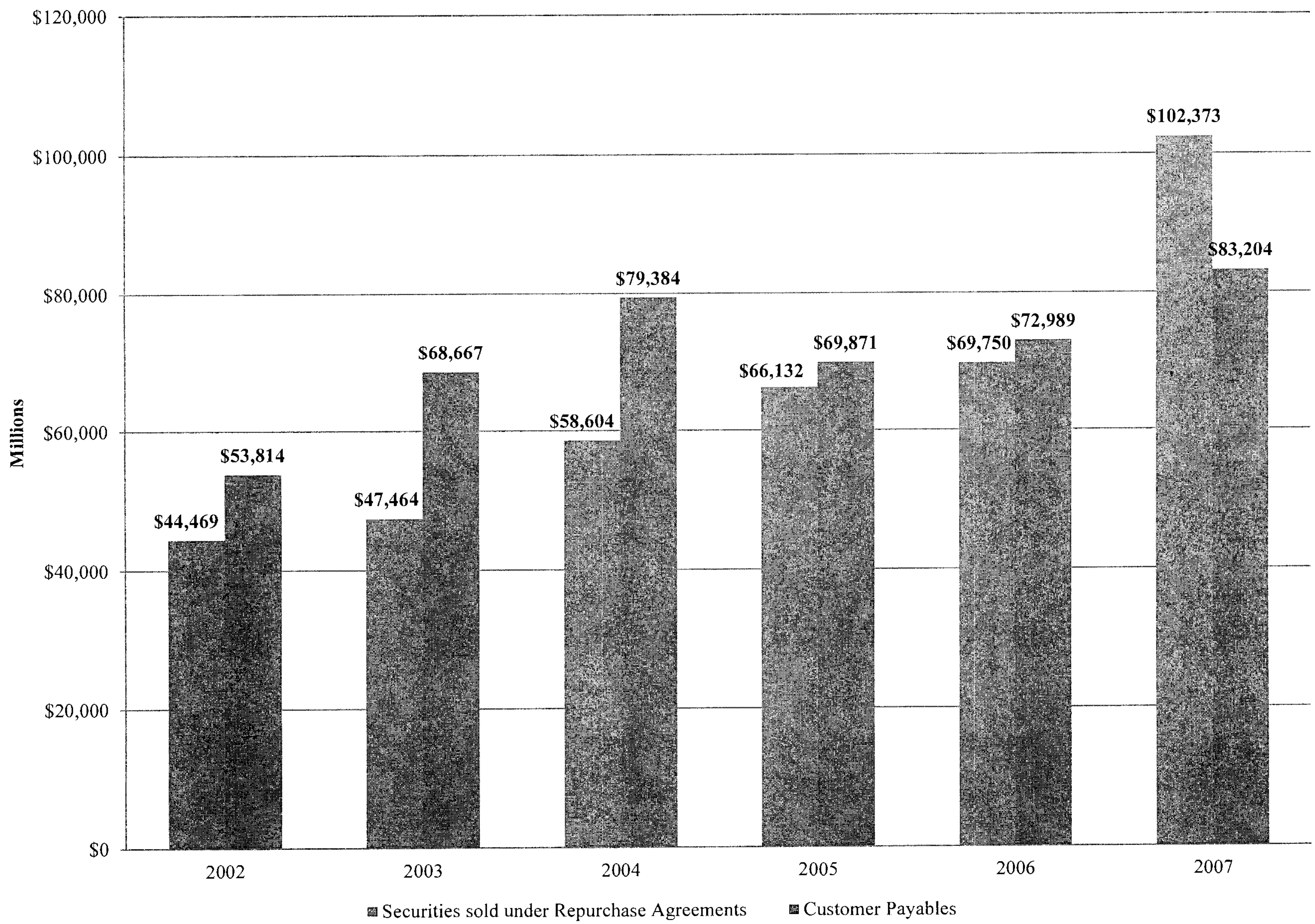
Note:
[1] In 2007, there was a $2.6 billion mortgage-related products net inventory markdown. This write-down is included in the calculation of Total Revenue and Revenues Net of Interest Expense.

Source: Capital IQ.

Attachment 9

Bruce S. Sherman v. Bear Stearns Companies Inc., et al.

Selected Financial Performance Data for The Bear Stearns Companies Inc., 2002 to 2007



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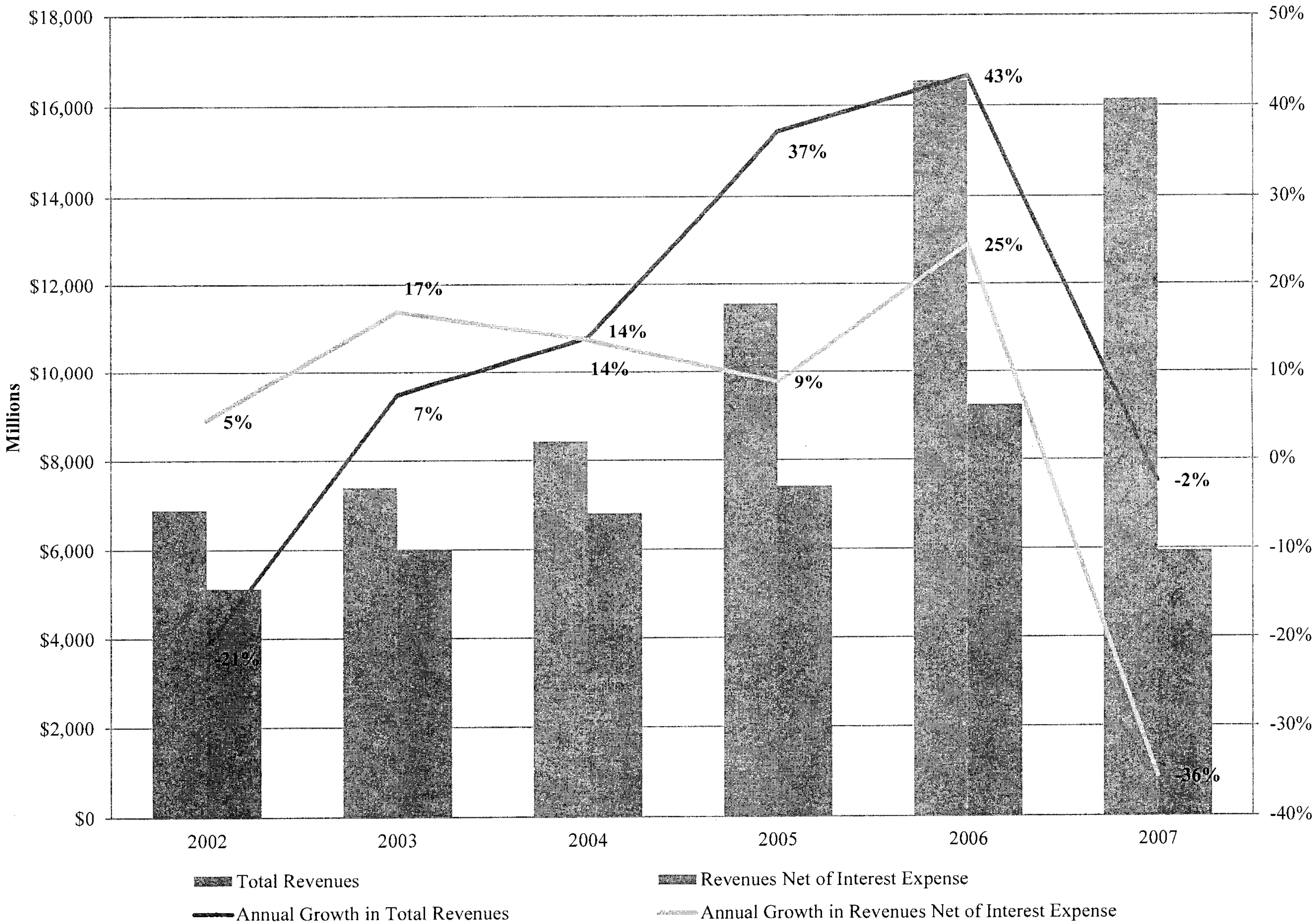
Attachment 10

Bruce S. Sherman v. Bear Stearns Companies Inc., et al.

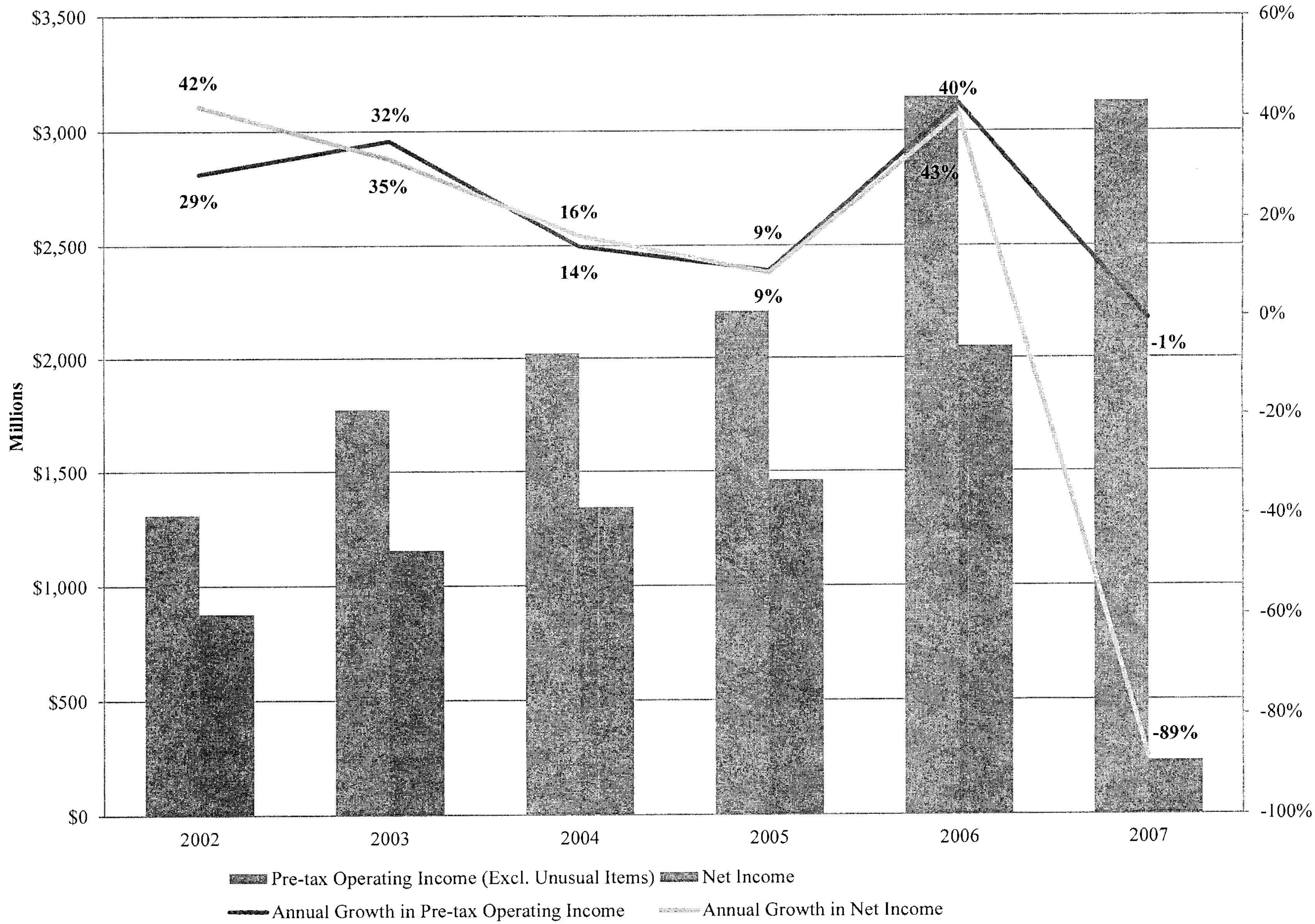
Selected Financial Performance Data for The Bear Stearns Companies Inc., 2002 to 2007



Attachment 11

Bruce S. Sherman v. Bear Stearns Companies Inc., et al.

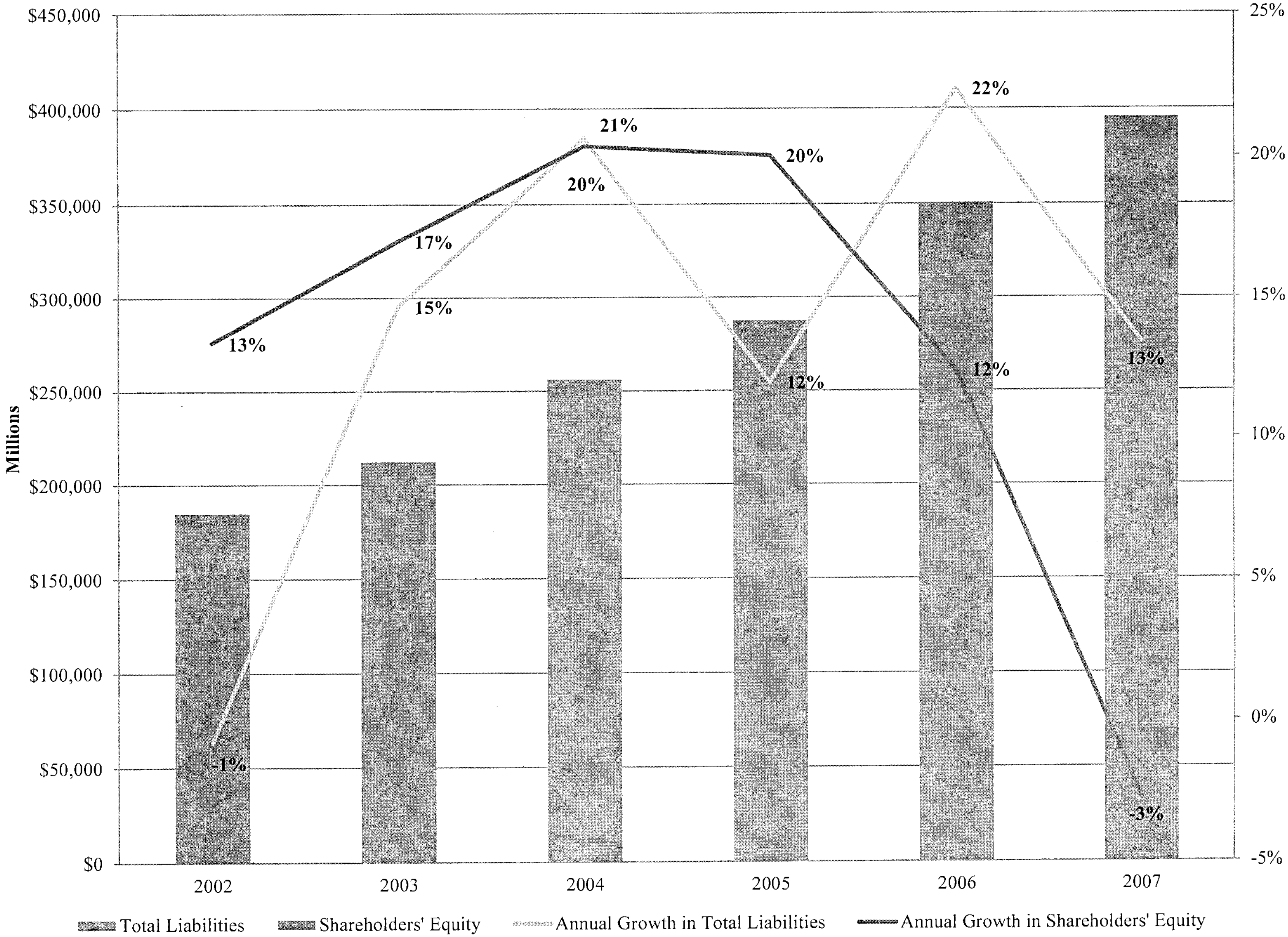
Selected Financial Performance Data for The Bear Stearns Companies Inc., 2002 to 2007



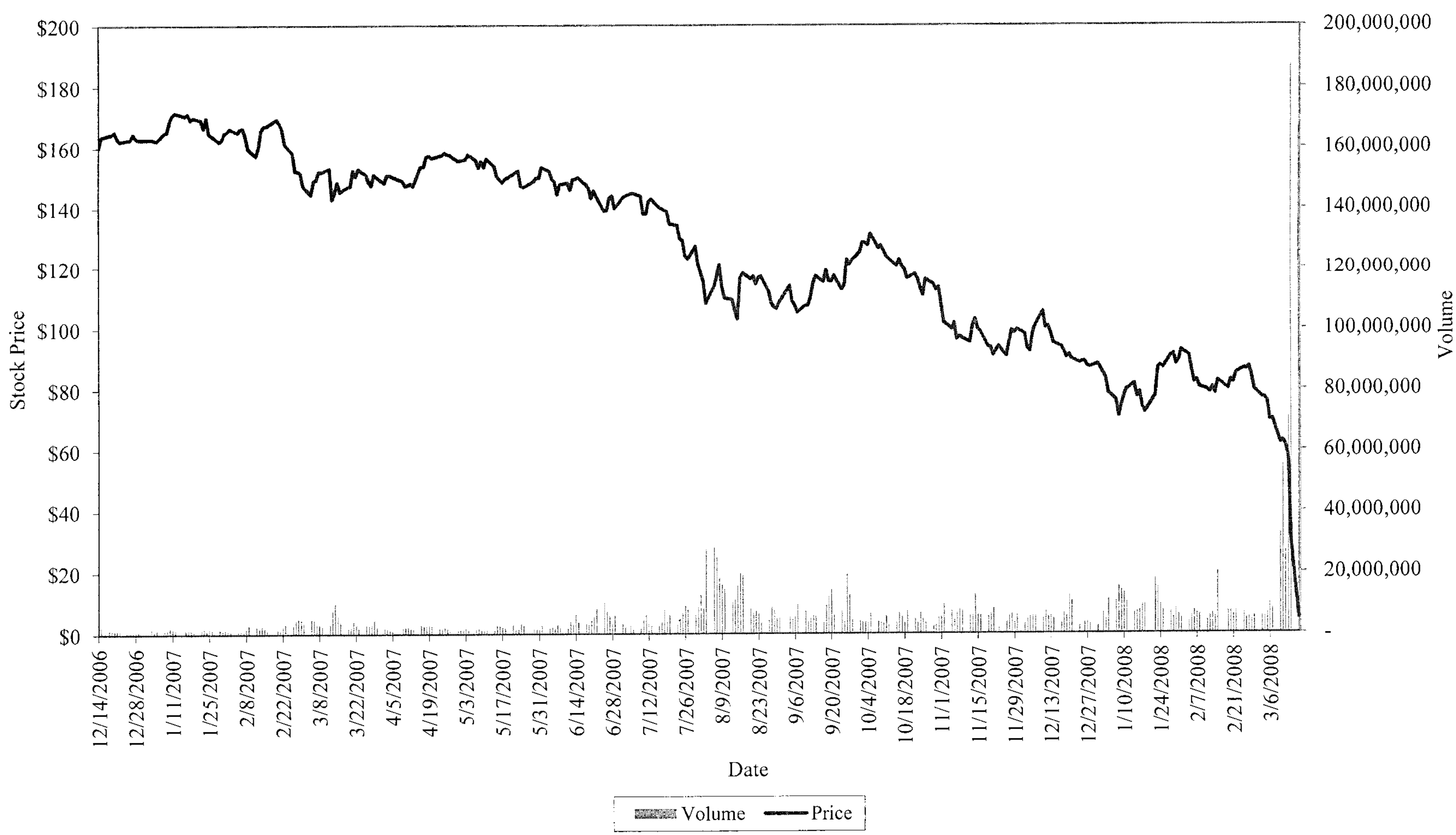
Attachment 12

Bruce S. Sherman v. Bear Stearns Companies Inc., et al.

Selected Financial Performance Data for The Bear Stearns Companies Inc., 2002 to 2007



Attachment 13
Bruce S. Sherman v. Bear Stearns Companies Inc., et al.
Daily Stock Price and Volume Movement
During the Relevant Period and the Disclosure Dates (December 14, 2006 - March 17, 2008)



Attachment 14

Bruce S. Sherman v. Bear Stearns Companies Inc., et al.

Bear Stearns' Common Stock Trading Volume and Share Turnover

	Weekly Volume of Shares Traded [1]	Weekly Volume as % of Shares Outstanding
Mean	30,058,989	25.66%
Median	24,547,987	20.85%
Minimum	2,595,900	2.21%
Maximum	372,019,175	315.03%

Share Turnover	
Total Volume	1,959,586,657
Average Shares Outstanding during the Relevant Period	117,435,702
Time Period (yrs)	1.25
Annualized Turnover Rate during the Relevant Period [2]	1333.94%

Notes:

[1] Statistics include those weeks that are fully contained in the Relevant Period and does not include December 14, 2006 and December 15, 2006.

[2] Turnover during the Relevant Period is calculated as Total Volume (in Relevant Period) divided by Average Shares Outstanding during the Relevant Period divided by Time Period (in years).

Sources: Bloomberg L.P. and 10-K Wizard.

Attachment 15
Bruce S. Sherman v. Bear Stearns Companies Inc., et al.
NYSE Common Stock Annualized Turnover Rates
From December 2006 to March 2008

Year	NYSE Annualized Monthly Turnover
December 2006	103.0%
January 2007	121.0%
February 2007	117.0%
March 2007	128.0%
April 2007	114.0%
May 2007	118.0%
June 2007	128.0%
July 2007	131.0%
August 2007	154.0%
September 2007	108.0%
October 2007	110.0%
November 2007	136.0%
December 2007	107.0%
January 2008	158.0%
February 2008	125.0%
March 2008	144.0%
Average	125.1%

Source: NYSEData.com Factbook - NYSE Group Turnover.

Attachment 16
Bruce S. Sherman v. Bear Stearns Companies Inc., et al.
Securities Analyst Coverage During the Relevant Period

Stock Analysts

Atlantic Equities, LLP
Bernstein Research
Brencourt Advisors, LLC
Buckingham Research Group, Inc.
CIBC World Markets Inc.
Credit Suisse
Deutsche Bank Securities Inc.
Fox-Pitt, Kelton, Inc.
Goldman Sachs Group, Inc.
Lehman Brothers
Merrill Lynch
New Constructs, LLC
Oppenheimer & Co. Inc.
Piper Jaffray Companies
PriceTarget Research, Inc.
Prudential Equity Group, Inc.
Punk, Ziegel & Co.
Rapid Ratings Pty Ltd.
Sandler O'Neill and Partners, L.P.
UBS Investment Bank
ValuEngine, Inc.
Wachovia Capital Markets, LLC
Zacks Investment Research Inc.

Credit Analysts

Dominion Bond Rating Service Ltd.
Egan-Jones Rating Company
Fitch Ratings
Gimme Credit, LLC
HSBC Global Research
Japan Credit Rating Agency Ltd.
Moody's Investors Service, Inc.
National Australia Bank Limited
Rating and Investment Information, Inc.
Standard & Poor's Financial Services LLC
UniCredit Research
Weiss Ratings, Inc.

Number of Analysts: 35

Sources: Investext, Capital IQ and Bloomberg L.P.

Attachment 17

Bruce S. Sherman v. Bear Stearns Companies Inc., et al.

Bear Stearns Companies, Inc. Quarterly Holdings During the Relevant Period [1]

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Number of Shares Held Reported for the Quarter Ending September 30, 2006

Shares Outstanding as of July 6, 2006 120,379,528

Rank	Holder	Shares Held	Percent of Shares Outstanding	Change in Securities Held [2]
1	Private Capital Management, L.P.	7,164,325	5.95%	703,687
2	Putnam LLC	6,324,916	5.25%	1,005,054
3	State Street Global Advisors, Inc.	3,956,252	3.29%	186,519
4	BlackRock, Inc.	3,506,648	2.91%	3,196,260
5	Barclays Global Investors UK Holdings Limited	3,414,142	2.84%	194,487
6	The Vanguard Group, Inc.	2,964,314	2.46%	61,466
7	JPMorgan Asset Management Holdings Inc.	1,771,186	1.47%	1,055,849
8	Acadian Asset Management (Australia) Ltd.	1,715,676	1.43%	473,069
9	D. E. Shaw Investment Management, L.L.C.	1,562,992	1.30%	409,950
10	LSV Asset Management	1,539,650	1.28%	40,160
	All 596 Other Institutional Holders	50,551,979	41.99%	20,437,252
Total		84,472,080	70.17%	27,763,753

Number of Shares Held Reported for the Quarter Ending December 31, 2006

Shares Outstanding as of October 06, 2006 117,311,064

Rank	Holder	Shares Held	Percent of Shares Outstanding	Change in Securities Held [2]
1	Private Capital Management, L.P.	7,043,319	6.00%	121,006
2	Putnam LLC	6,627,344	5.65%	302,428
3	State Street Global Advisors, Inc.	3,882,372	3.31%	73,880
4	Barclays Global Investors UK Holdings Limited	3,404,304	2.90%	9,838
5	BlackRock, Inc.	3,148,753	2.68%	357,895
6	The Vanguard Group, Inc.	2,966,589	2.53%	2,275
7	D. E. Shaw Investment Management, L.L.C.	2,170,292	1.85%	607,300
8	JPMorgan Asset Management Holdings Inc.	2,142,354	1.83%	371,168
9	Teachers Insurance and Annuity Association Fund	1,767,934	1.51%	270,508
10	Goldman Sachs Asset Management, L.P.	1,554,442	1.33%	197,482
	All 602 Other Institutional Holders	50,007,096	42.63%	14,782,843
Total		84,714,799	72.21%	17,096,623

Number of Shares Held Reported for the Quarter Ending March 31, 2007

Shares Outstanding as of February 05, 2007 119,771,275

Rank	Holder	Shares Held	Percent of Shares Outstanding	Change in Securities Held [2]
1	Private Capital Management, L.P.	7,620,848	6.36%	577,529
2	Putnam LLC	7,122,697	5.95%	495,353
3	Barclays Global Investors UK Holdings Limited	6,900,470	5.76%	3,496,166
4	State Street Global Advisors, Inc.	4,006,971	3.35%	124,599
5	BlackRock, Inc.	3,247,136	2.71%	98,383
6	The Vanguard Group, Inc.	3,245,927	2.71%	279,338
7	Janus Capital Management LLC	2,478,453	2.07%	1,005,224
8	JPMorgan Asset Management Holdings Inc.	2,204,470	1.84%	62,116
9	D. E. Shaw Investment Management, L.L.C.	1,986,717	1.66%	183,575
10	Teachers Insurance and Annuity Association Fund	1,890,137	1.58%	122,203
	All 612 Other Institutional Holders	50,080,528	41.81%	22,172,691
Total		90,784,354	75.80%	28,617,177

Number of Shares Held Reported for the Quarter Ending June 30, 2007

Shares Outstanding as of April 05, 2007 119,033,628

Rank	Holder	Shares Held	Percent of Shares Outstanding	Change in Securities Held [2]
1	Barclays Global Investors UK Holdings Limited	7,304,394	6.14%	403,924
2	Putnam LLC	7,031,187	5.91%	91,510
3	Private Capital Management, L.P.	6,962,642	5.85%	658,206
4	State Street Global Advisors, Inc.	3,832,400	3.22%	174,571
5	Barrow, Hanley, Mewhinney & Strauss, Inc.	3,597,450	3.02%	2,786,898
6	The Vanguard Group, Inc.	3,313,698	2.78%	67,771
7	D. E. Shaw Investment Management, L.L.C.	2,939,008	2.47%	952,291
8	Janus Capital Management LLC	2,774,110	2.33%	295,657
9	JPMorgan Asset Management Holdings Inc.	2,543,626	2.14%	339,156
10	OppenheimerFunds, Inc.	2,445,920	2.05%	2,443,095
	All 567 Other Institutional Holders	52,117,815	43.78%	25,431,707
Total		94,862,250	79.69%	33,644,786

Notes:

[1] Relevant Period is between December 14, 2006 and March 14, 2008.

[2] Change in Securities Held is the sum of the absolute values of the changes in shares held by each individual institutional holder.

Sources: Capital IQ and Forms 10-K and 10-Q.

Attachment 17

Bruce S. Sherman v. Bear Stearns Companies Inc., et al.

Bear Stearns Companies, Inc. Quarterly Holdings During the Relevant Period [1]

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Number of Shares Held Reported for the Quarter Ending September 30, 2007

Shares Outstanding as of July 06, 2007 116,124,098

Rank	Holder	Shares Held	Percent of Shares Outstanding	Change in Securities Held [2]
1	Barrow, Hanley, Mewhinney & Strauss, Inc.	10,734,784	9.24%	7,137,334
2	Putnam LLC	6,675,783	5.75%	355,404
3	Private Capital Management, L.P.	6,438,849	5.54%	523,793
4	Barclays Global Investors UK Holdings Limited	4,262,063	3.67%	3,042,331
5	Legg Mason, Inc., Asset Management Arm	3,999,718	3.44%	3,575,391
6	State Street Global Advisors, Inc.	3,207,718	2.76%	624,682
7	The Vanguard Group, Inc.	3,023,560	2.60%	290,138
8	Janus Capital Management LLC	2,774,653	2.39%	543
9	UBS Global Asset Management	2,506,047	2.16%	2,454,011
10	Highfields Capital Management, LP	2,398,590	2.07%	641,764
	All 491 Other Institutional Holders	49,028,698	42.22%	38,123,838
Total		95,050,463	81.85%	56,769,229

Number of Shares Held Reported for the Quarter Ending December 31, 2007

Shares Outstanding as of October 08, 2007 115,461,065

Rank	Holder	Shares Held	Percent of Shares Outstanding	Change in Securities Held [2]
1	Barrow, Hanley, Mewhinney & Strauss, Inc.	11,485,058	9.95%	750,274
2	Morgan Stanley	6,047,931	5.24%	5,814,350
3	Legg Mason Capital Management, Inc.	5,721,010	4.95%	3,712,110
4	Private Capital Management, L.P.	5,541,259	4.80%	897,590
5	Van Kampen Investments, Inc.	4,322,975	3.74%	3,576,619
6	Barclays Global Investors UK Holdings Limited	4,245,451	3.68%	16,612
7	State Street Global Advisors, Inc.	3,550,715	3.08%	342,997
8	The Vanguard Group, Inc.	3,149,691	2.73%	126,131
9	Janus Capital Management LLC	2,738,299	2.37%	36,354
10	Fidelity Investments	2,278,183	1.97%	405,919
	All 504 Other Institutional Holders	51,008,095	44.18%	37,044,218
Total		100,088,667	86.69%	52,723,174

Number of Shares Held Reported for the Quarter Ending March 31, 2008

Shares Outstanding as of January 16, 2008 118,090,675

Rank	Holder	Shares Held	Percent of Shares Outstanding	Change in Securities Held [2]
1	The Bear Stearns Companies, LLC, ESOP	26,852,179	22.74%	26,852,179
2	Barrow, Hanley, Mewhinney & Strauss, Inc.	7,948,300	6.73%	3,536,758
3	Eton Park Capital Management, L.P.	4,534,163	3.84%	4,534,163
4	Barclays Global Investors UK Holdings Limited	4,446,436	3.77%	200,985
5	State Street Global Advisors, Inc.	3,462,053	2.93%	88,662
6	The Vanguard Group, Inc.	3,273,048	2.77%	123,357
7	Deutsche Bank	3,145,089	2.66%	2,724,960
8	Merrill Lynch & Co. Inc., Asset Management Arm	3,108,034	2.63%	2,713,249
9	Fidelity Investments	2,954,546	2.50%	676,363
10	Horizon Asset Management, Inc.	2,919,886	2.47%	2,367,325
	All 335 Other Institutional Holders	46,844,013	39.67%	74,963,898
Total		109,487,747	92.71%	118,781,899

Notes:
[1] Relevant Period is between December 14, 2006 and March 14, 2008.
[2] Change in Securities Held is the sum of the absolute values of the changes in shares held by each individual institutional holder.

Sources: Capital IQ and Forms 10-K and 10-Q.

Attachment 18
Bruce S. Sherman v. Bear Stearns Companies Inc., et al.
Market Makers in Bear Stearns' Common Stock
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For the period of December 2006 to March 2008[1]:

Total Number of Market Makers	217
Total Number of Market Makers with Volume Exceeding 1 Million Shares	46

Note:
[1] Relevant Period is from December 14, 2006 to March 14, 2008.

Source: Bloomberg L.P.

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Bruce S. Sherman v. Bear Stearns Companies Inc., et al.
Market Makers in Bear Stearns' Common Stock
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List of Market Makers with Volume Exceeding 1 Million Shares from December 2006 to March 2008:

1	UBS Securities LLC
2	Citadel Securities LLC
3	Knight Capital Markets, Inc.
4	Goldman Sachs
5	Wedbush Morgan Securities Inc.
6	Morgan Stanley & Co., Incorporated
7	Barclays Capital Inc.
8	Charles Schwab And Co. Inc.
9	Citigroup Global Markets Inc.
10	Merrill Lynch & Co.
11	National Financial Services LLC
12	Schonfeld Securities, LLC
13	J.P. Morgan Securities Inc.
14	Dempsey & Company, LLC
15	Bear, Stearns & Co. Inc.
16	Lime Brokerage LLC
17	Automated Trading Desk Financial Services, LLC
18	Banc of America Securities LLC
19	EdgeTrade.com Inc.
20	Pershing Trading Company L.P.
21	Deutsche Bank Securities Inc.
22	Jefferies & Company, Inc.
23	OTA LLC
24	Knight Equity Markets, L.P.
25	Wolverine Execution Services
26	Susquehanna Capital Group
27	TD Securities Inc.
28	Sanford C. Bernstein and Co. Inc
29	Cantor Fitzgerald & Co.
30	Credit Suisse First Boston LLC
31	HSBC Securities (USA) Inc.
32	Wachovia Capital Markets, LLC
33	TD Professional Execution, Inc
34	Susquehanna Financial Group, Inc.
35	O'Connor & Company LLC
36	Bernard L. Madoff Investment Securities
37	Globalvest Group, Inc.
38	Dresdner Kleinwort
39	Timber Hill LLC
40	RBC Capital Markets
41	Keefe Bruyette and Woods Inc.
42	Carlin Equities Corp.
43	Jones and Associates Inc.
44	Weeden & Co.L.P.
45	Morgan Keegan
46	US Clearing Corp Division of Fleet

Source: Bloomberg L.P.

Attachment 19

Bruce S. Sherman v. Bear Stearns Companies Inc., et al.

Regression Results for the Modified Fama-French Three-Factor Model [1]

Using Standard & Poor's 500 Investment Banking & Brokerage Index [2] as an Explanatory Variable

Regression:	$R_{BSC}-R_f = \beta_0 + \beta_1(MKT-R_f) + \beta_2(SMB) + \beta_3(HML) + \beta_4 R_{S5INBK}$
Regression Period:	12/14/2005 ~ 12/13/2006
Observations:	252

	Coefficient	Standard Error	t-Statistic	Probability
β_0	-0.00011884	0.00059106	-0.20107055	0.84080889
β_1	0.03471466	0.13383947	0.25937535	0.79556170
β_2	0.05162931	0.16561669	0.31173979	0.75550126
β_3	0.21083438	0.27947571	0.75439250	0.45133220
β_4	1.01071679	0.07246156	13.94831642	0.00000000

R-squared	0.72409256	Mean dependent variance	0.001311122
Adjusted R-squared	0.71962442	Standard deviation of dependent variable	0.015565809
Standard error of regression	0.00824217	Akaike info criterion	-6.739463400
Sum of squared residuals	0.01677956	Schwarz criterion	-6.669435045
Log likelihood	854.17238840	Hannan-Quinn criterion	-6.711285441
F-statistic	162.05693883	Durbin-Watson statistic	2.151107981
Probability (F-statistic)	0.00000000		

Notes:

[1] Modified Fama-French Three-Factor model was run with the White heteroskedasticity adjustment for heteroskedasticity-adjusted standard errors.

[2] Standard & Poor's 500 Investment Banking & Brokerage Index (S5INBK) is a market-weighted index with seven members: The Bear Stearns Companies, Inc., Charles Schwab Corporation, E*TRADE Financial Corporation, Goldman Sachs Group, Inc., Lehman Brothers Holdings Inc., Merrill Lynch & Co., Inc., and Morgan Stanley as of March 14, 2008. The Bear Stearns Companies, Inc. was removed from the index for this calculation.

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Regression Results for the Modified Fama-French Model Including an Industry Index as an Explanatory Variable

	Regression Input								Regression Results Using Return on Custom Index				
Date	BSC Price	Dividend Amount	BSC Vol	BSC Total Return	Mkt-R_F	SMB	HML	Custom Index Return	Predicted Return	Abnormal Return	t-stats	p-value	Sig
12/14/2006	159.96	0	3,214,700	2.61%	0.75%	-0.18%	-0.05%	0.79%	0.81%	1.80%	2.1831	0.0300	**
12/15/2006	163.68	0	2,537,700	2.33%	-0.02%	-0.29%	0.25%	0.22%	0.27%	2.06%	2.4960	0.0132	**
12/18/2006	164.34	0	1,484,000	0.40%	-0.52%	-0.85%	0.04%	0.77%	0.73%	-0.33%	-0.3996	0.6898	
12/19/2006	164.59	0	1,363,200	0.15%	0.17%	-0.11%	0.11%	-0.30%	-0.27%	0.43%	0.5164	0.6061	
12/20/2006	165.32	0	1,135,200	0.44%	-0.08%	0.58%	-0.11%	0.52%	0.54%	-0.09%	-0.1117	0.9112	
12/21/2006	163.30	0	1,302,800	-1.22%	-0.40%	0.03%	0.32%	-0.83%	-0.77%	-0.45%	-0.5461	0.5855	
12/22/2006	162.19	0	1,116,300	-0.68%	-0.47%	0.30%	0.08%	-0.53%	-0.52%	-0.16%	-0.1988	0.8426	
12/26/2006	162.80	0	518,600	0.38%	0.41%	0.33%	0.35%	1.06%	1.19%	-0.81%	-0.9862	0.3250	
12/27/2006	164.56	0	646,700	1.08%	0.76%	0.47%	-0.02%	1.28%	1.35%	-0.27%	-0.3232	0.7468	
12/28/2006	163.35	0	590,000	-0.74%	-0.12%	-0.18%	0.02%	-0.32%	-0.32%	-0.42%	-0.5039	0.6148	
12/29/2006	162.78	0	840,600	-0.35%	-0.47%	-0.28%	-0.06%	-0.39%	-0.43%	0.08%	0.0957	0.9238	
1/3/2007	162.83	0	1,827,600	0.03%	-0.16%	0.07%	-0.08%	0.71%	0.71%	-0.68%	-0.8204	0.4128	
1/4/2007	162.64	0	1,002,400	-0.12%	0.04%	0.24%	-0.65%	-0.91%	-1.03%	0.92%	1.1106	0.2678	
1/5/2007	162.32	0	1,368,800	-0.20%	-0.74%	-0.89%	-0.31%	-0.47%	-0.61%	0.41%	0.4965	0.6200	
1/8/2007	164.99	0	1,245,200	1.64%	0.23%	-0.07%	0.04%	1.70%	1.75%	-0.10%	-0.1224	0.9027	
1/9/2007	165.25	0	1,212,100	0.16%	-0.02%	0.24%	-0.17%	0.03%	0.02%	0.14%	0.1697	0.8654	
1/10/2007	168.68	0	2,089,000	2.08%	0.19%	-0.07%	-0.24%	1.36%	1.33%	0.74%	0.9010	0.3685	
1/11/2007	170.65	0.32	1,660,500	1.36%	0.71%	0.51%	-0.30%	1.59%	1.60%	-0.25%	-0.3001	0.7644	
1/12/2007	171.51	0	1,506,200	0.50%	0.59%	0.16%	-0.14%	1.02%	1.04%	-0.54%	-0.6562	0.5123	
1/16/2007	170.62	0	1,167,200	-0.52%	0.01%	-0.26%	0.07%	-0.20%	-0.19%	-0.33%	-0.3954	0.6929	
1/17/2007	171.22	0	1,202,300	0.35%	-0.08%	-0.20%	0.05%	-0.23%	-0.23%	0.58%	0.7001	0.4845	
1/18/2007	169.23	0	1,347,900	-1.16%	-0.50%	-1.00%	0.60%	-1.55%	-1.50%	0.34%	0.4099	0.6822	
1/19/2007	169.91	0	955,200	0.40%	0.41%	0.38%	0.17%	0.34%	0.42%	-0.02%	-0.0276	0.9780	
1/22/2007	169.21	0	1,256,200	-0.41%	-0.56%	-0.44%	0.37%	0.77%	0.82%	-1.23%	-1.4965	0.1358	
1/23/2007	166.50	0	1,800,900	-1.60%	0.50%	0.52%	0.22%	-0.50%	-0.41%	-1.20%	-1.4517	0.1478	
1/24/2007	169.85	0	1,021,100	2.01%	0.85%	0.21%	-0.14%	2.49%	2.54%	-0.53%	-0.6375	0.5244	
1/25/2007	164.72	0	1,889,300	-3.02%	-1.10%	-0.05%	-0.15%	-2.94%	-3.04%	0.02%	0.0198	0.9842	
1/26/2007	164.07	0	1,451,000	-0.39%	-0.01%	0.55%	0.11%	0.03%	0.09%	-0.48%	-0.5868	0.5578	
1/29/2007	162.05	0	1,545,000	-1.23%	-0.01%	0.52%	0.19%	-1.52%	-1.46%	0.23%	0.2798	0.7799	
1/30/2007	162.80	0	1,230,900	0.46%	0.55%	-0.03%	0.25%	0.15%	0.23%	0.23%	0.2778	0.7814	
1/31/2007	164.85	0	1,308,800	1.26%	0.61%	-0.40%	0.02%	1.46%	1.49%	-0.23%	-0.2778	0.7814	
2/1/2007	165.28	0	1,408,800	0.26%	0.61%	0.29%	-0.16%	1.16%	1.18%	-0.92%	-1.1165	0.2653	
2/2/2007	166.35	0	905,200	0.65%	0.10%	0.10%	0.21%	0.46%	0.53%	0.12%	0.1441	0.8856	
2/5/2007	165.06	0	992,800	-0.78%	-0.08%	-0.20%	0.23%	-0.41%	-0.37%	-0.41%	-0.4938	0.6219	
2/6/2007	166.15	0	1,270,200	0.66%	0.13%	0.28%	0.18%	0.00%	0.07%	0.59%	0.7189	0.4729	
2/7/2007	166.44	0	623,400	0.17%	0.20%	0.40%	-0.07%	0.15%	0.18%	0.00%	-0.0028	0.9977	
2/8/2007	163.75	0	1,766,100	-1.62%	-0.07%	0.23%	-0.14%	-0.31%	-0.32%	-1.29%	-1.5699	0.1177	
2/9/2007	159.73	0	2,850,300	-2.45%	-0.71%	-0.30%	0.19%	-1.33%	-1.33%	-1.12%	-1.3610	0.1748	
2/12/2007	157.30	0	2,339,352	-1.52%	-0.41%	0.22%	0.12%	-1.23%	-1.21%	-0.31%	-0.3787	0.7052	
2/13/2007	160.10	0	1,932,337	1.78%	0.79%	-0.18%	0.37%	0.77%	0.88%	0.90%	1.0872	0.2780	
2/14/2007	165.81	0	2,568,086	3.57%	0.71%	-0.50%	-0.16%	1.78%	1.77%	1.79%	2.1773	0.0304	**
2/15/2007	167.10	0	1,860,200	0.78%	0.15%	0.16%	-0.44%	0.06%	-0.01%	0.79%	0.9586	0.3387	

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Regression Results for the Modified Fama-French Model Including an Industry Index as an Explanatory Variable

	Regression Input								Regression Results Using Return on Custom Index				
Date	BSC Price	Dividend Amount	BSC Vol	BSC Total Return	$Mkt-R_F$	SMB	HML	Custom Index Return	Predicted Return	Abnormal Return	t-stats	p-value	Sig
2/16/2007	167.19	0	1,264,300	0.05%	0.03%	0.26%	0.06%	-0.42%	-0.39%	0.45%	0.5402	0.5895	
2/20/2007	169.43	0	1,537,200	1.34%	0.34%	0.61%	-0.22%	0.91%	0.93%	0.41%	0.5019	0.6162	
2/21/2007	168.12	0	1,396,800	-0.77%	-0.05%	0.28%	-0.10%	-0.30%	-0.31%	-0.46%	-0.5640	0.5732	
2/22/2007	166.08	0	2,255,500	-1.21%	-0.06%	0.35%	-0.08%	-0.55%	-0.55%	-0.67%	-0.8096	0.4189	
2/23/2007	161.29	0	3,071,300	-2.88%	-0.28%	0.12%	-0.15%	-2.17%	-2.22%	-0.67%	-0.8111	0.4181	
2/26/2007	158.23	0	2,921,947	-1.90%	-0.15%	-0.15%	0.25%	-1.99%	-1.96%	0.07%	0.0814	0.9352	
2/27/2007	152.31	0	4,445,400	-3.74%	-3.43%	-0.04%	-0.03%	-5.07%	-5.24%	1.50%	1.8178	0.0703	*
2/28/2007	152.24	0	5,114,600	-0.05%	0.45%	-0.51%	0.29%	0.51%	0.57%	-0.62%	-0.7515	0.4531	
3/1/2007	151.72	0	4,625,639	-0.34%	-0.30%	-0.09%	0.16%	-0.35%	-0.33%	-0.01%	-0.0116	0.9908	
3/2/2007	147.49	0	3,584,300	-2.79%	-1.27%	-0.56%	0.13%	-1.86%	-1.91%	-0.88%	-1.0622	0.2892	
3/5/2007	144.50	0	4,896,600	-2.03%	-1.22%	-0.64%	-0.18%	-2.45%	-2.58%	0.55%	0.6678	0.5049	
3/6/2007	149.00	0	4,705,450	3.11%	1.65%	0.59%	-0.04%	3.14%	3.26%	-0.14%	-0.1740	0.8620	
3/7/2007	149.37	0	3,277,200	0.25%	-0.15%	-0.08%	0.07%	-0.20%	-0.19%	0.44%	0.5361	0.5923	
3/8/2007	152.06	0	3,026,800	1.80%	0.70%	-0.10%	0.07%	1.83%	1.89%	-0.09%	-0.1115	0.9113	
3/9/2007	151.98	0	2,573,200	-0.05%	0.14%	0.28%	0.15%	0.49%	0.56%	-0.61%	-0.7401	0.4599	
3/12/2007	153.15	0	3,109,300	0.77%	0.29%	0.22%	-0.06%	0.47%	0.49%	0.28%	0.3375	0.7360	
3/13/2007	142.97	0	7,722,700	-6.65%	-2.03%	-0.21%	0.03%	-3.89%	-4.00%	-2.65%	-3.2139	0.0015	***
3/14/2007	145.29	0	10,282,300	1.62%	0.52%	0.09%	-0.07%	0.63%	0.65%	0.97%	1.1816	0.2385	
3/15/2007	148.50	0	6,060,040	2.21%	0.46%	0.46%	0.08%	0.90%	0.97%	1.24%	1.5006	0.1347	
3/16/2007	145.48	0	3,865,699	-2.03%	-0.38%	-0.10%	-0.18%	-0.90%	-0.96%	-1.08%	-1.3050	0.1931	
3/19/2007	147.12	0	2,115,000	1.13%	1.09%	-0.14%	0.03%	1.57%	1.63%	-0.51%	-0.6147	0.5393	
3/20/2007	147.32	0	2,225,200	0.14%	0.66%	0.01%	0.14%	0.72%	0.79%	-0.65%	-0.7888	0.4310	
3/21/2007	152.49	0	4,190,817	3.51%	1.66%	-0.16%	-0.16%	4.14%	4.21%	-0.70%	-0.8478	0.3974	
3/22/2007	150.57	0	2,904,668	-1.26%	-0.03%	0.12%	-0.19%	-0.52%	-0.56%	-0.70%	-0.8533	0.3943	
3/23/2007	152.97	0	2,084,100	1.59%	0.15%	0.04%	0.15%	0.68%	0.74%	0.86%	1.0418	0.2985	
3/26/2007	151.17	0	3,002,500	-1.18%	0.04%	-0.08%	-0.07%	-0.44%	-0.45%	-0.73%	-0.8818	0.3787	
3/27/2007	148.86	0	2,704,200	-1.53%	-0.59%	-0.18%	0.05%	-1.25%	-1.28%	-0.25%	-0.3023	0.7627	
3/28/2007	147.57	0	2,832,600	-0.87%	-0.72%	0.24%	0.06%	-1.72%	-1.73%	0.86%	1.0483	0.2955	
3/29/2007	151.08	0	4,461,500	2.38%	0.33%	-0.17%	0.21%	-0.19%	-0.14%	2.52%	3.0527	0.0025	***
3/30/2007	150.35	0	2,187,006	-0.48%	-0.06%	0.25%	-0.06%	-0.01%	0.00%	-0.48%	-0.5870	0.5578	
4/2/2007	148.44	0	2,071,400	-1.27%	0.28%	0.01%	0.08%	0.13%	0.17%	-1.44%	-1.7516	0.0811	*
4/3/2007	150.88	0	1,826,380	1.64%	0.87%	0.02%	-0.17%	2.36%	2.39%	-0.75%	-0.9089	0.3643	
4/4/2007	150.95	0	1,397,088	0.05%	0.13%	-0.18%	-0.23%	-0.21%	-0.25%	0.30%	0.3630	0.7169	
4/5/2007	150.40	0	951,500	-0.36%	0.34%	-0.01%	-0.03%	0.29%	0.31%	-0.68%	-0.8205	0.4127	
4/9/2007	149.00	0	1,946,401	-0.93%	0.04%	-0.25%	0.22%	0.49%	0.54%	-1.47%	-1.7891	0.0748	*
4/10/2007	147.45	0	2,166,700	-1.04%	0.25%	0.06%	0.07%	-0.03%	0.01%	-1.05%	-1.2733	0.2041	
4/11/2007	147.78	0	2,313,200	0.22%	-0.61%	-0.07%	0.10%	-0.96%	-0.96%	1.19%	1.4407	0.1509	
4/12/2007	148.26	0	1,847,700	0.32%	0.62%	0.17%	-0.10%	0.31%	0.34%	-0.01%	-0.0128	0.9898	
4/13/2007	147.44	0.32	1,579,864	-0.34%	0.35%	0.22%	-0.12%	0.06%	0.07%	-0.41%	-0.4964	0.6200	
4/16/2007	153.83	0	2,915,900	4.33%	1.03%	0.27%	-0.04%	3.45%	3.53%	0.80%	0.9697	0.3331	
4/17/2007	153.77	0	2,724,370	-0.04%	0.08%	-0.39%	-0.11%	-0.12%	-0.15%	0.11%	0.1321	0.8950	
4/18/2007	157.02	0	3,006,700	2.11%	0.01%	-0.63%	0.34%	0.98%	1.04%	1.07%	1.2991	0.1951	

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Regression Results for the Modified Fama-French Model Including an Industry Index as an Explanatory Variable

	Regression Input								Regression Results Using Return on Custom Index				
Date	BSC Price	Dividend Amount	BSC Vol	BSC Total Return	Mkt-R_F	SMB	HML	Custom Index Return	Predicted Return	Abnormal Return	t-stats	p-value	Sig
4/19/2007	157.37	0	2,641,515	0.22%	-0.30%	-0.34%	-0.06%	0.25%	0.22%	0.00%	-0.0009	0.9992	
4/20/2007	156.60	0	2,661,104	-0.49%	0.91%	0.14%	0.07%	1.00%	1.07%	-1.56%	-1.8978	0.0589	*
4/23/2007	157.30	0	1,874,371	0.45%	-0.19%	0.06%	-0.16%	0.36%	0.33%	0.12%	0.1397	0.8890	
4/24/2007	157.59	0	1,746,400	0.18%	-0.10%	-0.05%	-0.24%	-0.83%	-0.89%	1.07%	1.2997	0.1949	
4/25/2007	158.39	0	2,018,082	0.51%	0.93%	-0.33%	0.23%	1.41%	1.50%	-0.99%	-1.2036	0.2299	
4/26/2007	157.74	0	1,779,624	-0.41%	-0.08%	0.29%	-0.34%	-0.26%	-0.32%	-0.10%	-0.1154	0.9082	
4/27/2007	157.58	0	1,273,030	-0.10%	-0.10%	-0.28%	-0.39%	-0.26%	-0.35%	0.25%	0.3059	0.7600	
4/30/2007	155.70	0	1,169,845	-1.19%	-0.95%	-0.80%	-0.01%	-1.30%	-1.38%	0.19%	0.2316	0.8171	
5/1/2007	155.82	0	1,567,588	0.08%	0.16%	-0.09%	0.04%	0.09%	0.11%	-0.03%	-0.0419	0.9666	
5/2/2007	155.96	0	1,202,857	0.09%	0.81%	0.53%	-0.06%	0.64%	0.69%	-0.60%	-0.7340	0.4637	
5/3/2007	156.25	0	1,916,104	0.19%	0.37%	-0.33%	0.29%	0.82%	0.89%	-0.70%	-0.8550	0.3934	
5/4/2007	157.77	0	1,395,200	0.97%	0.27%	0.13%	-0.01%	1.68%	1.72%	-0.75%	-0.9041	0.3668	
5/7/2007	155.85	0	1,489,275	-1.22%	0.24%	-0.33%	0.33%	-0.52%	-0.46%	-0.76%	-0.9194	0.3588	
5/8/2007	153.39	0	1,732,200	-1.58%	-0.16%	-0.04%	-0.02%	-0.88%	-0.89%	-0.68%	-0.8296	0.4076	
5/9/2007	155.56	0	1,363,100	1.41%	0.35%	0.07%	-0.09%	0.94%	0.95%	0.46%	0.5601	0.5759	
5/10/2007	153.53	0	1,396,600	-1.30%	-1.39%	-0.39%	0.22%	-1.72%	-1.75%	0.45%	0.5422	0.5882	
5/11/2007	156.40	0	1,411,594	1.87%	1.02%	0.10%	0.14%	1.73%	1.82%	0.05%	0.0551	0.9561	
5/14/2007	153.85	0	1,335,500	-1.63%	-0.29%	-0.60%	0.14%	-0.74%	-0.75%	-0.88%	-1.0653	0.2878	
5/15/2007	150.55	0	2,733,317	-2.14%	-0.20%	-0.75%	0.32%	-0.93%	-0.91%	-1.23%	-1.4956	0.1360	
5/16/2007	149.58	0	2,691,717	-0.64%	0.72%	-0.21%	0.05%	0.80%	0.84%	-1.48%	-1.7974	0.0735	*
5/17/2007	148.51	0	2,152,300	-0.72%	-0.07%	-0.33%	0.06%	-0.10%	-0.10%	-0.62%	-0.7465	0.4560	
5/18/2007	149.57	0	1,816,600	0.71%	0.66%	0.32%	-0.40%	1.58%	1.56%	-0.85%	-1.0258	0.3060	
5/21/2007	151.07	0	2,978,900	1.00%	0.31%	0.84%	-0.27%	0.12%	0.12%	0.88%	1.0669	0.2870	
5/22/2007	151.66	0	1,394,254	0.39%	0.07%	0.67%	-0.16%	0.35%	0.36%	0.03%	0.0372	0.9704	
5/23/2007	152.35	0	1,580,158	0.45%	-0.11%	-0.20%	-0.21%	-0.20%	-0.25%	0.71%	0.8567	0.3925	
5/24/2007	147.55	0	3,391,854	-3.15%	-1.15%	-0.32%	-0.13%	-1.28%	-1.37%	-1.78%	-2.1613	0.0316	**
5/25/2007	146.86	0	2,814,044	-0.47%	0.62%	0.17%	-0.02%	-0.35%	-0.32%	-0.15%	-0.1818	0.8559	
5/29/2007	148.89	0	1,582,840	1.38%	0.29%	0.55%	-0.05%	1.16%	1.20%	0.18%	0.2181	0.8275	
5/30/2007	150.00	0	1,496,212	0.75%	0.80%	-0.29%	0.09%	0.97%	1.02%	-0.27%	-0.3311	0.7409	
5/31/2007	149.96	0	1,698,036	-0.03%	0.14%	0.29%	-0.30%	-0.16%	-0.20%	0.17%	0.2101	0.8338	
6/1/2007	153.50	0	2,769,111	2.36%	0.49%	0.33%	-0.01%	0.80%	0.85%	1.51%	1.8323	0.0681	*
6/4/2007	152.16	0	1,941,048	-0.87%	0.19%	0.02%	0.01%	-0.67%	-0.66%	-0.21%	-0.2593	0.7957	
6/5/2007	149.66	0	2,133,020	-1.64%	-0.55%	-0.08%	-0.23%	-0.31%	-0.37%	-1.27%	-1.5404	0.1247	
6/6/2007	148.71	0	1,583,910	-0.63%	-0.95%	0.13%	0.02%	-0.54%	-0.56%	-0.08%	-0.0915	0.9272	
6/7/2007	144.40	0	2,821,393	-2.90%	-1.83%	0.09%	-0.10%	-2.64%	-2.74%	-0.16%	-0.1909	0.8488	
6/8/2007	147.81	0	2,017,289	2.36%	1.06%	-0.12%	0.00%	2.22%	2.28%	0.08%	0.0964	0.9233	
6/11/2007	148.39	0	1,828,042	0.39%	0.09%	-0.26%	0.11%	0.88%	0.91%	-0.52%	-0.6309	0.5287	
6/12/2007	146.00	0	4,051,000	-1.61%	-1.10%	-0.10%	-0.17%	-0.96%	-1.05%	-0.57%	-0.6858	0.4935	
6/13/2007	149.49	0	3,007,311	2.39%	1.40%	-0.29%	-0.06%	2.50%	2.56%	-0.17%	-0.2051	0.8377	
6/14/2007	149.60	0	6,309,200	0.07%	0.52%	0.04%	0.03%	-0.79%	-0.76%	0.84%	1.0138	0.3117	
6/15/2007	150.09	0	3,979,800	0.33%	0.72%	0.42%	0.01%	0.03%	0.09%	0.24%	0.2870	0.7743	
6/18/2007	147.95	0	3,339,042	-1.43%	-0.11%	0.01%	-0.13%	0.26%	0.24%	-1.67%	-2.0215	0.0443	**

Attachment 19

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Regression Results for the Modified Fama-French Model Inclnding an Industry Index as an Explanatory Variable

	Regression Input								Regression Results Using Return on Custom Index				
Date	BSC Price	Dividend Amount	BSC Vol	BSC Total Return	Mkt-R_F	SMB	HML	Custom Index Return	Predicted Return	Abnormal Return	t-stats	p-value	Sig
6/19/2007	146.79	0	3,096,945	-0.78%	0.16%	-0.01%	0.12%	0.19%	0.23%	-1.02%	-1.2331	0.2187	
6/20/2007	143.20	0	4,492,000	-2.45%	-1.29%	0.17%	-0.28%	-1.68%	-1.79%	-0.66%	-0.8014	0.4237	
6/21/2007	145.81	0	5,599,900	1.82%	0.52%	-0.21%	0.05%	0.03%	0.06%	1.76%	2.1401	0.0333	**
6/22/2007	143.75	0	8,288,801	-1.41%	-1.09%	0.62%	-0.02%	-2.78%	-2.82%	1.40%	1.7036	0.0897	*
6/25/2007	139.10	0	10,520,478	-3.23%	-0.50%	-0.34%	-0.05%	-1.25%	-1.30%	-1.93%	-2.3421	0.0200	**
6/26/2007	139.35	0	7,405,367	0.18%	-0.42%	0.17%	-0.41%	-0.57%	-0.66%	0.84%	1.0192	0.3091	
6/27/2007	143.31	0	5,830,663	2.84%	0.91%	0.33%	-0.23%	1.96%	1.99%	0.85%	1.0341	0.3021	
6/28/2007	144.00	0	3,437,661	0.48%	0.05%	0.12%	0.15%	-0.31%	-0.27%	0.75%	0.9133	0.3620	
6/29/2007	140.00	0	6,077,594	-2.78%	-0.09%	-0.34%	0.20%	-1.51%	-1.50%	-1.28%	-1.5526	0.1218	
7/2/2007	143.16	0	3,237,792	2.26%	1.12%	-0.09%	0.12%	1.48%	1.56%	0.70%	0.8483	0.3971	
7/3/2007	143.89	0	2,160,300	0.51%	0.33%	-0.05%	-0.11%	1.89%	1.91%	-1.40%	-1.6947	0.0914	*
7/5/2007	144.66	0	2,533,900	0.54%	0.10%	0.16%	-0.53%	-0.77%	-0.88%	1.41%	1.7113	0.0883	*
7/6/2007	144.80	0	1,611,329	0.10%	0.43%	-0.07%	-0.13%	0.63%	0.63%	-0.53%	-0.6414	0.5219	
7/9/2007	143.89	0	1,881,500	-0.63%	0.14%	0.03%	0.03%	0.01%	0.03%	-0.66%	-0.8020	0.4233	
7/10/2007	137.96	0	4,508,974	-4.12%	-1.38%	-0.16%	-0.33%	-3.26%	-3.42%	-0.71%	-0.8559	0.3929	
7/11/2007	138.03	0	6,085,000	0.05%	0.49%	-0.29%	-0.11%	0.49%	0.49%	-0.44%	-0.5283	0.5978	
7/12/2007	142.12	0	3,374,576	2.96%	1.73%	-0.18%	-0.31%	2.34%	2.35%	0.61%	0.7396	0.4602	
7/13/2007	142.89	0.32	2,555,410	0.77%	0.30%	-0.31%	0.15%	0.75%	0.79%	-0.02%	-0.0268	0.9787	
7/16/2007	140.31	0	2,582,326	-1.81%	-0.32%	-0.46%	-0.31%	-0.43%	-0.53%	-1.28%	-1.5484	0.1228	
7/17/2007	139.91	0	3,606,100	-0.29%	-0.03%	0.15%	-0.13%	-0.15%	-0.17%	-0.12%	-0.1403	0.8886	
7/18/2007	139.34	0	7,989,600	-0.41%	-0.17%	-0.27%	0.10%	-2.43%	-2.45%	2.04%	2.4785	0.0139	**
7/19/2007	138.93	0	4,176,749	-0.29%	0.47%	0.29%	-0.44%	-1.36%	-1.43%	1.13%	1.3767	0.1698	
7/20/2007	134.72	0	6,193,212	-3.03%	-1.19%	-0.29%	-0.17%	-2.94%	-3.06%	0.03%	0.0306	0.9756	
7/23/2007	134.25	0	3,207,058	-0.35%	0.29%	-0.44%	-0.33%	-0.27%	-0.34%	0.00%	-0.0056	0.9956	
7/24/2007	129.85	0	5,121,167	-3.28%	-2.03%	-0.50%	-0.34%	-3.48%	-3.67%	0.40%	0.4806	0.6312	
7/25/2007	129.28	0	6,650,637	-0.44%	0.25%	-0.37%	0.02%	1.35%	1.36%	-1.80%	-2.1843	0.0299	**
7/26/2007	124.25	0	9,131,077	-3.89%	-2.40%	0.01%	-0.33%	-3.29%	-3.47%	-0.42%	-0.5100	0.6105	
7/27/2007	123.18	0	7,799,612	-0.86%	-1.49%	-0.06%	0.10%	-0.43%	-0.46%	-0.40%	-0.4847	0.6283	
7/30/2007	127.25	0	6,246,741	3.30%	0.91%	-0.24%	-0.12%	1.27%	1.28%	2.02%	2.4536	0.0148	**
7/31/2007	121.22	0	8,727,639	-4.74%	-1.03%	0.29%	0.07%	-2.71%	-2.74%	-2.00%	-2.4250	0.0160	**
8/1/2007	118.30	0	12,591,755	-2.41%	0.39%	-0.51%	-0.10%	-0.59%	-0.62%	-1.79%	-2.1689	0.0310	**
8/2/2007	115.63	0	8,151,811	-2.26%	0.58%	0.11%	-0.46%	-0.80%	-0.88%	-1.38%	-1.6743	0.0953	*
8/3/2007	108.35	0	27,845,792	-6.30%	-2.61%	-0.66%	-0.60%	-4.73%	-5.03%	-1.27%	-1.5358	0.1259	
8/6/2007	113.81	0	28,288,319	5.04%	1.79%	-1.13%	-0.50%	4.99%	4.95%	0.09%	0.1086	0.9136	
8/7/2007	116.89	0	24,823,069	2.71%	0.64%	0.25%	-0.47%	1.30%	1.26%	1.45%	1.7566	0.0802	*
8/8/2007	121.12	0	18,271,113	3.62%	1.54%	1.16%	-0.74%	2.86%	2.86%	0.76%	0.9250	0.3559	
8/9/2007	114.05	0	16,067,124	-5.84%	-2.71%	1.59%	-0.42%	-5.26%	-5.41%	-0.43%	-0.5160	0.6063	
8/10/2007	110.20	0	14,705,213	-3.38%	-0.07%	0.10%	1.20%	-1.48%	-1.23%	-2.15%	-2.6027	0.0098	***
8/13/2007	109.60	0	10,088,400	-0.54%	-0.08%	-1.16%	0.46%	-1.38%	-1.36%	0.81%	0.9870	0.3246	
8/14/2007	106.00	0	11,251,396	-3.28%	-1.93%	-0.04%	-0.20%	-3.95%	-4.10%	0.81%	0.9870	0.3246	
8/15/2007	103.15	0	15,484,428	-2.69%	-1.59%	0.08%	-0.13%	-2.58%	-2.68%	-0.01%	-0.0138	0.9890	
8/16/2007	116.44	0	19,893,201	12.88%	0.16%	1.31%	0.73%	3.74%	4.01%	8.87%	10.7621	0.0000	***

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Regression Results for the Modified Fama-French Model Including an Industry Index as an Explanatory Variable

Regression Input									Regression Results Using Return on Custom Index				
Date	BSC Price	Dividend Amount	BSC Vol	BSC Total Return	Mkt-R_F	SMB	HML	Custom Index Return	Predicted Return	Abnormal Return	t-stats	p-value	Sig
8/17/2007	118.20	0	19,007,137	1.51%	2.42%	-0.42%	0.19%	5.10%	5.26%	-3.75%	-4.5486	0.0000	***
8/20/2007	116.30	0	8,026,491	-1.61%	0.14%	0.13%	-0.22%	-0.87%	-0.91%	-0.70%	-0.8502	0.3961	
8/21/2007	117.20	0	6,679,107	0.77%	0.20%	-0.05%	-0.03%	1.13%	1.14%	-0.37%	-0.4501	0.6530	
8/22/2007	114.75	0	7,387,700	-2.09%	1.28%	0.01%	0.00%	1.42%	1.48%	-3.57%	-4.3350	0.0000	***
8/23/2007	116.61	0	6,484,400	1.62%	-0.18%	-0.97%	0.29%	-0.32%	-0.32%	1.94%	2.3500	0.0196	**
8/24/2007	117.10	0	3,464,100	0.42%	1.22%	0.10%	-0.24%	1.10%	1.11%	-0.69%	-0.8413	0.4010	
8/27/2007	112.20	0	4,595,750	-4.18%	-0.85%	-0.06%	-0.21%	-1.52%	-1.61%	-2.58%	-3.1294	0.0020	***
8/28/2007	108.42	0	8,464,500	-3.37%	-2.36%	-0.08%	-0.28%	-4.38%	-4.57%	1.20%	1.4515	0.1479	
8/29/2007	107.10	0	7,494,100	-1.22%	2.16%	0.09%	0.02%	1.29%	1.40%	-2.62%	-3.1732	0.0017	***
8/30/2007	106.70	0	4,856,300	-0.37%	-0.40%	-0.01%	-0.46%	-1.25%	-1.37%	1.00%	1.2096	0.2276	
8/31/2007	108.66	0	5,143,600	1.84%	1.21%	0.04%	-0.10%	2.72%	2.78%	-0.94%	-1.1408	0.2550	
9/4/2007	114.13	0	5,668,257	5.03%	1.09%	-0.25%	0.08%	2.40%	2.47%	2.56%	3.1104	0.0021	***
9/5/2007	108.95	0	4,810,000	-4.54%	-1.03%	0.01%	-0.26%	-2.13%	-2.24%	-2.30%	-2.7890	0.0057	***
9/6/2007	107.67	0	5,675,480	-1.17%	0.43%	-0.06%	-0.15%	-0.02%	-0.04%	-1.14%	-1.3803	0.1688	
9/7/2007	105.37	0	9,439,345	-2.14%	-1.64%	-0.26%	0.20%	-0.72%	-0.75%	-1.39%	-1.6857	0.0931	*
9/10/2007	107.50	0	7,334,000	2.02%	-0.30%	-0.50%	-0.17%	0.90%	0.85%	1.18%	1.4262	0.1551	
9/11/2007	107.64	0	4,061,300	0.13%	1.34%	0.03%	-0.42%	0.75%	0.72%	-0.59%	-0.7200	0.4722	
9/12/2007	110.05	0	4,908,268	2.24%	0.01%	-0.42%	-0.16%	0.10%	0.05%	2.19%	2.6546	0.0085	***
9/13/2007	114.83	0	5,732,150	4.34%	0.72%	-0.66%	0.16%	3.83%	3.90%	0.45%	0.5419	0.5884	
9/14/2007	117.19	0	5,582,446	2.06%	0.11%	0.31%	-0.09%	-0.06%	-0.05%	2.11%	2.5542	0.0112	**
9/17/2007	115.38	0	3,696,800	-1.54%	-0.60%	-0.43%	0.01%	-1.62%	-1.67%	0.13%	0.1566	0.8757	
9/18/2007	119.20	0	9,459,850	3.31%	2.91%	0.55%	0.14%	6.09%	6.32%	-3.01%	-3.6473	0.0003	***
9/19/2007	115.64	0	12,037,650	-2.99%	0.56%	0.57%	0.18%	0.36%	0.46%	-3.44%	-4.1771	0.0000	***
9/20/2007	115.46	0	14,410,621	-0.16%	-0.54%	-0.16%	-0.26%	-2.01%	-2.11%	1.96%	2.3738	0.0184	**
9/21/2007	117.32	0	5,914,401	1.61%	0.47%	-0.25%	-0.15%	0.71%	0.69%	0.92%	1.1160	0.2655	
9/24/2007	112.99	0	7,304,904	-3.69%	-0.46%	-0.40%	-0.50%	-1.57%	-1.72%	-1.97%	-2.3901	0.0176	**
9/25/2007	114.24	0	3,696,600	1.11%	-0.06%	-0.30%	-0.43%	-0.82%	-0.93%	2.04%	2.4750	0.0140	**
9/26/2007	123.00	0	19,288,200	7.67%	0.53%	0.11%	-0.07%	1.61%	1.64%	6.03%	7.3168	0.0000	***
9/27/2007	121.15	0	12,730,843	-1.50%	0.52%	0.18%	-0.12%	1.28%	1.30%	-2.80%	-3.4028	0.0008	***
9/28/2007	122.81	0	4,278,600	1.37%	-0.29%	-0.47%	0.01%	-0.87%	-0.91%	2.28%	2.7643	0.0061	***
10/1/2007	125.50	0	4,155,800	2.19%	1.36%	0.76%	0.02%	2.83%	2.96%	-0.77%	-0.9287	0.3539	
10/2/2007	128.57	0	3,761,800	2.45%	0.04%	0.64%	0.08%	2.25%	2.33%	0.12%	0.1452	0.8847	
10/3/2007	128.28	0	3,692,300	-0.23%	-0.53%	-0.16%	-0.17%	0.23%	0.18%	-0.40%	-0.4863	0.6272	
10/4/2007	127.61	0	3,475,700	-0.52%	0.26%	-0.04%	0.18%	-0.63%	-0.59%	0.07%	0.0802	0.9362	
10/5/2007	131.58	0	6,721,600	3.11%	1.17%	0.60%	-0.08%	1.80%	1.88%	1.23%	1.4963	0.1359	
10/8/2007	126.64	0	3,879,981	-3.75%	-0.32%	-0.18%	-0.30%	-1.44%	-1.54%	-2.21%	-2.6855	0.0077	***
10/9/2007	127.46	0	3,509,400	0.65%	0.79%	-0.24%	-0.09%	2.72%	2.75%	-2.10%	-2.5481	0.0114	**
10/10/2007	125.81	0	3,300,000	-1.29%	-0.04%	-0.01%	-0.41%	-0.88%	-0.97%	-0.32%	-0.3905	0.6965	
10/11/2007	124.14	0	5,704,000	-1.33%	-0.53%	-0.62%	0.63%	-1.32%	-1.25%	-0.08%	-0.0922	0.9266	
10/12/2007	123.16	0.32	2,891,800	-0.53%	0.52%	0.10%	-0.27%	0.89%	0.86%	-1.40%	-1.6942	0.0915	*
10/15/2007	120.69	0	3,538,100	-2.01%	-0.87%	-0.34%	-0.09%	-2.06%	-2.14%	0.14%	0.1654	0.8687	
10/16/2007	123.05	0	6,698,683	1.96%	-0.72%	-0.05%	-0.16%	-1.77%	-1.85%	3.80%	4.6146	0.0000	***

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	Regression Input								Regression Results Using Return on Custom Index				
Date	BSC Price	Dividend Amount	BSC Vol	BSC Total Return	Mkt-R_F	SMB	HML	Custom Index Return	Predicted Return	Abnormal Return	t-stats	p-value	Sig
10/17/2007	120.41	0	5,480,124	-2.15%	0.27%	-0.15%	-0.24%	0.41%	0.36%	-2.51%	-3.0448	0.0026	***
10/18/2007	119.34	0	3,506,189	-0.89%	0.02%	0.06%	-0.30%	-0.80%	-0.87%	-0.02%	-0.0257	0.9795	
10/19/2007	116.41	0	7,497,103	-2.46%	-2.47%	-0.41%	0.04%	-4.76%	-4.91%	2.45%	2.9760	0.0032	***
10/22/2007	117.85	0	4,797,900	1.24%	0.31%	0.87%	-0.07%	1.33%	1.38%	-0.15%	-0.1764	0.8602	
10/23/2007	116.16	0	3,571,100	-1.43%	1.01%	0.00%	-0.52%	1.12%	1.06%	-2.49%	-3.0213	0.0028	***
10/24/2007	113.54	0	6,943,700	-2.26%	-0.34%	-0.48%	-0.03%	-1.46%	-1.52%	-0.74%	-0.8952	0.3716	
10/25/2007	111.05	0	4,816,527	-2.19%	-0.12%	-0.28%	-0.07%	-0.77%	-0.81%	-1.39%	-1.6826	0.0937	*
10/26/2007	116.21	0	3,576,500	4.65%	1.37%	0.26%	0.26%	4.91%	5.08%	-0.44%	-0.5317	0.5954	
10/29/2007	114.54	0	2,332,400	-1.44%	0.53%	-0.33%	-0.40%	2.83%	2.78%	-4.22%	-5.1194	0.0000	***
10/30/2007	112.77	0	2,811,400	-1.55%	-0.71%	0.14%	0.04%	-1.74%	-1.77%	0.22%	0.2708	0.7868	
10/31/2007	113.60	0	5,173,300	0.74%	1.31%	-0.02%	0.05%	2.51%	2.60%	-1.86%	-2.2570	0.0249	**
11/1/2007	107.94	0	5,357,300	-4.98%	-2.61%	-0.80%	-0.24%	-4.83%	-5.06%	0.08%	0.0992	0.9211	
11/2/2007	102.16	0	9,547,467	-5.35%	0.19%	0.12%	-0.62%	-4.44%	-4.60%	-0.76%	-0.9187	0.3591	
11/5/2007	99.91	0	7,501,789	-2.20%	-0.68%	-0.28%	0.04%	-4.01%	-4.08%	1.88%	2.2810	0.0234	**
11/6/2007	102.00	0	4,480,610	2.09%	1.27%	0.02%	-0.22%	1.03%	1.05%	1.05%	1.2690	0.2056	
11/7/2007	96.57	0	6,602,400	-5.32%	-2.71%	-0.01%	-0.18%	-4.79%	-4.97%	-0.36%	-0.4328	0.6655	
11/8/2007	97.49	0	7,875,383	0.95%	-0.08%	0.55%	1.19%	0.49%	0.77%	0.18%	0.2172	0.8283	
11/9/2007	96.91	0	7,345,317	-0.59%	-1.52%	0.32%	0.83%	0.65%	0.79%	-1.39%	-1.6863	0.0930	*
11/12/2007	95.57	0	5,829,570	-1.38%	-1.42%	0.46%	0.06%	0.34%	0.34%	-1.72%	-2.0876	0.0379	**
11/13/2007	100.87	0	5,979,800	5.55%	2.78%	-0.47%	-0.23%	6.98%	7.08%	-1.53%	-1.8609	0.0639	*
11/14/2007	103.27	0	12,600,634	2.38%	-0.60%	-0.27%	-0.24%	0.98%	0.91%	1.47%	1.7829	0.0758	*
11/15/2007	99.94	0	6,024,000	-3.22%	-1.43%	0.07%	0.16%	-2.61%	-2.65%	-0.57%	-0.6973	0.4862	
11/16/2007	99.07	0	5,821,670	-0.87%	0.45%	-0.65%	-0.46%	-1.07%	-1.19%	0.32%	0.3884	0.6981	
11/19/2007	94.05	0	5,504,636	-5.07%	-1.89%	-0.24%	-0.26%	-2.97%	-3.13%	-1.94%	-2.3541	0.0193	**
11/20/2007	93.87	0	6,424,935	-0.19%	0.38%	-0.58%	-0.01%	-0.89%	-0.92%	0.72%	0.8793	0.3801	
11/21/2007	91.28	0	8,184,134	-2.76%	-1.55%	0.45%	0.03%	-3.42%	-3.48%	0.72%	0.8712	0.3845	
11/23/2007	94.23	0	1,819,110	3.23%	1.62%	0.17%	-0.03%	3.68%	3.79%	-0.55%	-0.6713	0.5026	
11/26/2007	91.04	0	3,730,466	-3.39%	-2.06%	-0.09%	-0.44%	-4.41%	-4.62%	1.24%	1.5004	0.1348	
11/27/2007	95.43	0	5,516,117	4.82%	1.22%	-0.52%	-0.41%	3.25%	3.22%	1.60%	1.9437	0.0531	*
11/28/2007	99.50	0	6,386,428	4.26%	2.93%	0.24%	-0.47%	7.43%	7.53%	-3.26%	-3.9609	0.0001	***
11/29/2007	98.64	0	3,570,022	-0.86%	-0.05%	-0.52%	-0.23%	-1.60%	-1.69%	0.83%	1.0033	0.3167	
11/30/2007	99.70	0	5,930,886	1.07%	0.69%	-0.56%	0.68%	1.36%	1.51%	-0.44%	-0.5330	0.5945	
12/3/2007	98.40	0	3,017,240	-1.30%	-0.57%	-0.51%	0.31%	-0.82%	-0.81%	-0.49%	-0.5964	0.5515	
12/4/2007	93.61	0	4,943,435	-4.87%	-0.74%	-0.13%	-0.04%	-3.98%	-4.07%	-0.80%	-0.9725	0.3318	
12/5/2007	92.60	0	5,304,006	-1.08%	1.43%	0.01%	-0.29%	0.80%	0.80%	-1.88%	-2.2819	0.0233	**
12/6/2007	98.21	0	5,739,790	6.06%	1.56%	0.79%	0.21%	3.41%	3.59%	2.47%	2.9935	0.0030	***
12/7/2007	100.94	0	5,551,214	2.78%	-0.03%	0.03%	0.04%	-0.36%	-0.35%	3.13%	3.8028	0.0002	***
12/10/2007	105.75	0	5,049,840	4.77%	0.77%	-0.12%	0.10%	2.92%	2.99%	1.77%	2.1493	0.0326	**
12/11/2007	100.30	0	7,254,661	-5.15%	-2.56%	-0.22%	0.15%	-6.18%	-6.31%	1.16%	1.4081	0.1604	
12/12/2007	100.84	0	5,321,183	0.54%	0.55%	-0.02%	-0.11%	0.73%	0.73%	-0.19%	-0.2346	0.8147	
12/13/2007	98.39	0	5,885,177	-2.43%	-0.09%	-0.34%	-0.15%	-1.14%	-1.20%	-1.23%	-1.4927	0.1368	
12/14/2007	95.29	0	4,906,245	-3.15%	-1.35%	-0.45%	-0.17%	0.29%	0.19%	-3.34%	-4.0571	0.0001	***

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Date	BSC Price	Dividend Amount	BSC Vol	BSC Total Return	Mkt-R_F	SMB	HML	Custom Index Return	Predicted Return	Abnormal Return	t-stats	p-value	Sig
12/17/2007	94.07	0	3,463,797	-1.28%	-1.61%	-0.11%	0.30%	-1.06%	-1.07%	-0.21%	-0.2589	0.7960	
12/18/2007	92.59	0	6,708,457	-1.57%	0.62%	1.04%	-0.04%	-2.48%	-2.44%	0.87%	1.0537	0.2930	
12/19/2007	90.60	0	6,009,033	-2.15%	-0.05%	0.28%	-0.40%	1.56%	1.51%	-3.65%	-4.4343	0.0000	***
12/20/2007	91.42	0	12,428,623	0.91%	0.62%	0.78%	-0.40%	0.18%	0.16%	0.74%	0.8984	0.3698	
12/21/2007	89.95	0	10,725,454	-1.61%	1.70%	0.23%	-0.06%	3.76%	3.86%	-5.46%	-6.6286	0.0000	***
12/24/2007	88.80	0	2,421,447	-1.28%	0.90%	0.09%	0.13%	0.94%	1.01%	-2.29%	-2.7799	0.0059	***
12/26/2007	89.29	0	3,541,344	0.55%	0.14%	0.15%	-0.06%	0.54%	0.54%	0.01%	0.0099	0.9921	
12/27/2007	87.71	0	3,848,499	-1.77%	-1.37%	-1.06%	0.21%	-2.26%	-2.34%	0.57%	0.6947	0.4879	
12/28/2007	87.35	0	3,083,033	-0.41%	0.19%	-0.36%	-0.08%	0.06%	0.04%	-0.45%	-0.5410	0.5890	
12/31/2007	88.25	0	2,589,229	1.03%	-0.67%	0.06%	0.29%	1.08%	1.13%	-0.10%	-0.1224	0.9027	
1/2/2008	85.30	0	6,842,628	-3.34%	-1.20%	-0.04%	-0.02%	-3.48%	-3.57%	0.23%	0.2755	0.7832	
1/3/2008	83.83	0	4,621,953	-1.72%	-0.11%	-0.98%	-0.33%	-0.91%	-1.05%	-0.68%	-0.8200	0.4130	
1/4/2008	78.87	0	11,143,793	-5.92%	-2.58%	-0.37%	0.31%	-3.10%	-3.18%	-2.74%	-3.3219	0.0010	***
1/7/2008	76.25	0	10,779,313	-3.32%	0.01%	0.10%	0.20%	-1.32%	-1.28%	-2.04%	-2.4720	0.0141	**
1/8/2008	71.17	0	15,459,025	-6.66%	-1.72%	-0.36%	-0.65%	-3.91%	-4.17%	-2.49%	-3.0266	0.0027	***
1/9/2008	74.82	0	14,260,382	5.13%	0.99%	-0.41%	-0.53%	1.98%	1.90%	3.23%	3.9220	0.0001	***
1/10/2008	77.75	0	13,262,149	3.92%	0.83%	-0.11%	0.40%	3.02%	3.16%	0.76%	0.9202	0.3583	
1/11/2008	79.90	0.32	10,515,143	3.18%	-1.40%	-0.61%	0.22%	0.94%	0.91%	2.26%	2.7458	0.0065	***
1/14/2008	81.80	0	6,822,325	2.38%	1.04%	-0.12%	-0.16%	1.77%	1.78%	0.60%	0.7229	0.4704	
1/15/2008	77.57	0	7,126,661	-5.17%	-2.48%	0.53%	0.08%	-4.41%	-4.50%	-0.67%	-0.8164	0.4151	
1/16/2008	79.05	0	7,512,636	1.91%	-0.66%	0.82%	0.91%	2.43%	2.67%	-0.76%	-0.9212	0.3579	
1/17/2008	74.44	0	9,413,978	-5.83%	-2.79%	0.45%	-0.08%	-5.31%	-5.46%	-0.37%	-0.4512	0.6522	
1/18/2008	72.39	0	9,485,933	-2.75%	-0.58%	-0.24%	-0.80%	-0.07%	-0.27%	-2.48%	-3.0103	0.0029	***
1/22/2008	77.84	0	17,866,899	7.53%	-0.94%	0.44%	0.75%	3.54%	3.72%	3.81%	4.6204	0.0000	***
1/23/2008	87.00	0	15,245,545	11.77%	1.98%	0.57%	1.38%	5.82%	6.27%	5.50%	6.6751	0.0000	***
1/24/2008	87.74	0	9,447,241	0.85%	1.24%	-0.94%	-0.75%	-0.43%	-0.60%	1.45%	1.7568	0.0802	*
1/25/2008	87.03	0	7,474,246	-0.81%	-1.32%	0.82%	0.28%	-3.96%	-3.94%	3.13%	3.8034	0.0002	***
1/28/2008	91.10	0	6,859,348	4.68%	1.71%	-0.01%	0.76%	2.85%	3.10%	1.58%	1.9184	0.0562	*
1/29/2008	91.58	0	5,227,733	0.53%	0.63%	-0.44%	0.88%	0.30%	0.49%	0.04%	0.0492	0.9608	
1/30/2008	88.26	0	8,166,053	-3.63%	-0.54%	-0.33%	-0.05%	-0.23%	-0.28%	-3.34%	-4.0557	0.0001	***
1/31/2008	89.65	0	6,383,377	1.57%	1.49%	0.73%	0.36%	1.35%	1.53%	0.05%	0.0548	0.9564	
2/1/2008	92.89	0	4,936,790	3.61%	1.59%	0.55%	0.07%	2.07%	2.19%	1.43%	1.7298	0.0849	*
2/4/2008	91.00	0	3,713,701	-2.03%	-0.91%	0.14%	0.10%	-2.09%	-2.13%	0.09%	0.1110	0.9117	
2/5/2008	86.11	0	5,723,778	-5.37%	-3.09%	0.57%	0.05%	-5.67%	-5.80%	0.43%	0.5198	0.6036	
2/6/2008	82.25	0	7,425,340	-4.48%	-0.81%	-0.26%	0.56%	-1.79%	-1.74%	-2.74%	-3.3297	0.0010	***
2/7/2008	83.03	0	6,507,605	0.95%	0.77%	0.35%	0.00%	1.59%	1.65%	-0.70%	-0.8502	0.3961	
2/8/2008	80.67	0	6,093,644	-2.84%	-0.21%	-0.07%	-0.23%	-2.27%	-2.36%	-0.49%	-0.5903	0.5555	
2/11/2008	79.76	0	4,281,422	-1.13%	0.57%	-0.31%	-0.40%	-0.78%	-0.88%	-0.25%	-0.3032	0.7620	
2/12/2008	78.93	0	5,703,524	-1.04%	0.62%	-0.16%	-0.04%	-1.53%	-1.54%	0.50%	0.6091	0.5430	
2/13/2008	80.53	0	6,495,020	2.03%	1.44%	0.56%	-0.02%	0.33%	0.40%	1.63%	1.9731	0.0496	**
2/14/2008	78.47	0	5,542,760	-2.56%	-1.33%	-0.72%	0.39%	-1.94%	-1.97%	-0.59%	-0.7184	0.4732	
2/15/2008	82.79	0	20,091,047	5.51%	-0.06%	-0.76%	0.33%	0.82%	0.85%	4.66%	5.6503	0.0000	***

Attachment 19

Bruce S. Sherman v. Bear Stearns Companies Inc., et al.

Regression Results for the Modified Fama-French Model Including an Industry Index as an Explanatory Variable

	Regression Input								Regression Results Using Return on Custom Index				
Date	BSC Price	Dividend Amount	BSC Vol	BSC Total Return	Mkt-R_F	SMB	HML	Custom Index Return	Predicted Return	Abnormal Return	t-stats	p-value	Sig
2/19/2008	80.02	0	7,214,755	-3.35%	0.04%	0.23%	-0.26%	-2.70%	-2.77%	-0.57%	-0.6943	0.4882	
2/20/2008	83.05	0	7,336,449	3.79%	0.89%	0.17%	-0.12%	2.92%	2.96%	0.82%	0.9997	0.3184	
2/21/2008	82.23	0	5,892,273	-0.99%	-1.20%	-0.25%	-0.29%	-1.08%	-1.21%	0.23%	0.2742	0.7841	
2/22/2008	85.16	0	7,266,415	3.56%	0.67%	-0.82%	0.54%	1.98%	2.09%	1.48%	1.7910	0.0745	*
2/25/2008	86.72	0	6,845,720	1.83%	1.51%	0.34%	-0.08%	1.61%	1.67%	0.16%	0.1932	0.8470	
2/26/2008	86.48	0	4,789,458	-0.28%	0.81%	0.30%	-0.02%	-0.79%	-0.76%	0.49%	0.5913	0.5548	
2/27/2008	87.30	0	5,245,633	0.95%	-0.09%	-0.01%	-0.46%	2.21%	2.12%	-1.17%	-1.4246	0.1555	
2/28/2008	84.22	0	4,188,824	-3.53%	-0.78%	-0.38%	-0.13%	-3.34%	-3.45%	-0.08%	-0.0914	0.9272	
2/29/2008	79.86	0	5,544,260	-5.18%	-2.63%	0.26%	-0.07%	-4.53%	-4.68%	-0.50%	-0.6086	0.5433	
3/3/2008	77.32	0	5,409,421	-3.18%	-0.06%	-0.26%	-0.16%	-2.30%	-2.37%	-0.81%	-0.9774	0.3293	
3/4/2008	77.17	0	5,282,016	-0.19%	-0.48%	0.03%	0.09%	0.13%	0.13%	-0.33%	-0.3960	0.6925	
3/5/2008	75.78	0	6,814,472	-1.80%	0.68%	-0.29%	-0.22%	0.18%	0.14%	-1.94%	-2.3505	0.0195	**
3/6/2008	69.90	0	9,757,934	-7.76%	-2.21%	-0.30%	-0.13%	-4.73%	-4.90%	-2.86%	-3.4733	0.0006	***
3/7/2008	70.08	0	8,034,812	0.26%	-0.88%	0.31%	0.51%	0.23%	0.32%	-0.06%	-0.0756	0.9398	
3/10/2008	62.30	0	32,470,867	-11.10%	-1.84%	-0.43%	0.59%	-4.02%	-4.03%	-7.07%	-8.5759	0.0000	***
3/11/2008	62.97	0	55,014,343	1.08%	3.57%	0.02%	-0.06%	7.48%	7.67%	-6.59%	-7.9970	0.0000	***
3/12/2008	61.58	0	26,806,066	-2.21%	-0.71%	0.18%	-0.67%	-1.73%	-1.91%	-0.30%	-0.3610	0.7184	
3/13/2008	57.00	0	70,741,056	-7.44%	0.73%	1.14%	-0.16%	2.02%	2.09%	-9.53%	-11.5622	0.0000	***
3/14/2008	30.00	0	186,986,843	-47.37%	-2.01%	-0.11%	-0.07%	-6.13%	-6.29%	-41.08%	-49.8451	0.0000	***
3/17/2008	4.81	0	166,719,539	-83.97%	-1.51%	-0.66%	0.55%	-6.68%	-6.73%	-77.24%	-93.7122	0.0000	***
3/18/2008	5.91	0	166,729,805	22.87%	3.97%	-0.20%	-0.49%	18.10%	18.32%	4.55%	5.5223	0.0000	***

Attachment 20
Bruce S. Sherman v. Bear Stearns Companies Inc., et al.
Analysis of Significance Levels Reported in the Three Top-Tier Finance Journals from 2005 to 2010

Panel A. Journal of Finance

Significance Reported at the:		2005	2006	2007	2008	2009	2010	2005-2010
1% level only	Count	2	1	1	1	1	3	9
	Percentage [1]	4.4%	2.2%	2.3%	4.0%	1.9%	7.0%	3.5%
5% level or better	Count	14	11	14	7	16	8	70
	Percentage [1]	31.1%	24.4%	32.6%	28.0%	29.6%	18.6%	27.5%
10% level or better	Count	29	33	28	17	37	32	176
	Percentage [1]	64.4%	73.3%	65.1%	68.0%	68.5%	74.4%	69.0%
Total Articles Reporting Significance		45	45	43	25	54	43	255
Non-Empirical or Not Reported		40	42	40	28	23	24	197
Total Articles Reviewed		85	87	83	53	77	67	452

Panel B. Journal of Financial Economics

Significance Reported at the:		2005	2006	2007	2008	2009	2010	2005-2010
1% level only	Count	3	4	2	1	3	0	13
	Percentage [1]	5.7%	8.0%	2.7%	1.8%	4.8%	0.0%	3.6%
5% level or better	Count	16	5	21	13	13	17	85
	Percentage [1]	30.2%	10.0%	28.8%	23.2%	21.0%	24.6%	23.4%
10% level or better	Count	34	41	50	42	46	52	265
	Percentage [1]	64.2%	82.0%	68.5%	75.0%	74.2%	75.4%	73.0%
Total Articles Reporting Significance		53	50	73	56	62	69	363
Non-Empirical or Not Reported		24	38	27	19	31	24	163
Total Articles Reviewed		77	88	100	75	93	93	526

Panel C. Review of Financial Studies

Significance Reported at the:		2005	2006	2007	2008	2009	2010	2005-2010
1% level only	Count	1	2	2	1	4	1	11
	Percentage [1]	7.1%	8.3%	6.5%	2.9%	5.1%	1.4%	4.4%
5% level or better	Count	4	9	9	11	16	17	66
	Percentage [1]	28.6%	37.5%	29.0%	31.4%	20.3%	24.6%	26.2%
10% level or better	Count	9	13	20	23	59	51	175
	Percentage [1]	64.3%	54.2%	64.5%	65.7%	74.7%	73.9%	69.4%
Total Articles Reporting Significance		14	24	31	35	79	69	252
Non-Empirical or Not Reported		27	17	28	18	41	41	172
Total Articles Reviewed		41	41	59	53	120	110	424

Panel D. All Three Major Journals

Significance Reported at the:		2005	2006	2007	2008	2009	2010	2005-2010
1% level only	Count	6	7	5	3	8	4	33
	Percentage [1]	5.4%	5.9%	3.4%	2.6%	4.1%	2.2%	3.8%
5% level or better	Count	34	25	44	31	45	42	221
	Percentage [1]	30.4%	21.0%	29.9%	26.7%	23.1%	23.2%	25.4%
10% level or better	Count	72	87	98	82	142	135	616
	Percentage [1]	64.3%	73.1%	66.7%	70.7%	72.8%	74.6%	70.8%
Total Articles Reporting Significance		112	119	147	116	195	181	870
Non-Empirical or Not Reported		91	97	95	65	95	89	532
Total Articles Reviewed		203	216	242	181	290	270	1,402

Note:
[1] Count divided by the total articles reporting significance.

Sources: Journal of Finance, Journal of Financial Economics, and Review of Financial Studies.

Attachment 21

Bruce S. Sherman v. Bear Stearns Companies Inc., et al.

Market Value of the Public Float in Bear Stearns' Common Stock during the Relevant Period

Date	Shares Held by Insiders [1]	Shares Outstanding [2]	Stock Price [3]	Market Capitalization	Public Float (Shares)	Market Value of Public Float	Public Float (%)[4]
9/30/2006	7,724,246	120,379,528	$ 140.10	$ 16,865,171,873	112,655,282	$ 15,783,005,008	93.58%
12/31/2006	7,724,246	117,311,064	162.78	19,095,894,998	109,586,818	17,838,542,234	93.42%
3/31/2007	7,617,275	119,771,275	150.35	18,007,611,196	112,154,000	16,862,353,900	93.64%
6/30/2007	7,541,768	119,033,628	140.00	16,664,707,920	111,491,860	15,608,860,400	93.66%
9/30/2007	15,638,710	116,124,098	122.81	14,261,200,475	100,485,388	12,340,610,500	86.53%
12/31/2007	18,595,231	115,461,065	88.25	10,189,438,986	96,865,834	8,548,409,851	83.89%
3/31/2008	14,310,434	118,090,675	10.49	1,238,771,181	103,780,241	1,088,654,728	87.88%
Average	**11,307,416**	**118,024,476**	**$ 116.40**	**$ 13,760,399,518**	**106,717,060**	**$ 12,581,490,946**	**90.37%**

Notes:
[1] Shares held by insiders from Capital IQ.
[2] Shares outstanding from Bear Stearn's filed 10-Q and 10-K forms.
[3] Stock price from Bloomberg L.P.
[4] Percentage public float is calculated as the number of shares in the public float divided by the number of shares outstanding.

Sources: 10-K Wizard, Bloomberg L.P., and Capital IQ.

Attachment 22

Bruce S. Sherman v. Bear Stearns Companies Inc., et al.

Bid-Ask Spread of Bear Stearns' Common Stock during the Relevant Period[1]

Month / Year	Days in Month	Mean	Median	Min	Max
December 2006 [2]	11	0.06%	0.04%	0.01%	0.13%
January 2007	20	0.07%	0.07%	0.00%	0.17%
February 2007	19	0.09%	0.05%	0.01%	0.41%
March 2007	22	0.05%	0.04%	0.00%	0.21%
April 2007	20	0.05%	0.04%	0.01%	0.12%
May 2007	22	0.06%	0.04%	0.00%	0.19%
June 2007	21	0.13%	0.06%	0.01%	1.14%
July 2007	21	0.11%	0.06%	0.01%	0.58%
August 2007	23	0.23%	0.17%	0.02%	0.74%
September 2007	19	0.16%	0.09%	0.01%	1.00%
October 2007	23	0.15%	0.05%	0.02%	1.05%
November 2007	21	0.09%	0.08%	0.00%	0.39%
December 2007	20	0.12%	0.08%	0.01%	0.44%
January 2008	21	0.16%	0.14%	0.01%	0.53%
February 2008	20	0.12%	0.09%	0.01%	0.35%
March 2008 [3]	10	0.19%	0.16%	0.03%	0.74%
Class Period	**313**	**0.11%**	**0.06%**	**0.00%**	**1.14%**
NYSE [4]		**0.31%**	**0.14%**		

Notes:

[1] Relevant Period is from December 14, 2006 to March 14, 2008.

[2] December 14, 2006 to December 31, 2006.

[3] March 1, 2008 to March 14, 2008.

[4] Data for actively traded stocks on the NYSE for 2007 and 2008.

Source: CRSP (Center for Research in Security Prices).

Attachment 23
Bruce S. Sherman v. Bear Stearns Companies Inc., et al.
Short Interest in BSC Common Stock During the Relevant Period [1]

	Bear Stearns Companies, Inc. Short Interest			NYSE Short Interest
Date	**Short Interest [2]**	**Shares Outstanding [3]**	**Short Interest as a Percentage of Shares Outstanding**	**Short Interest as a Percentage of Shares Outstanding [4]**
12/15/2006	5,641,548	117,311,064	4.809%	2.600%
1/12/2007	6,403,153	117,311,064	5.458%	2.600%
2/16/2007	5,185,531	119,771,275	4.330%	2.600%
3/16/2007	5,559,482	119,771,275	4.642%	2.800%
4/13/2007	5,975,321	119,033,628	5.020%	2.900%
5/18/2007	6,286,238	119,033,628	5.281%	3.100%
6/15/2007	7,578,016	119,033,628	6.366%	3.300%
7/13/2007	9,277,700	116,124,098	7.989%	3.400%
8/17/2007	12,082,278	116,124,098	10.405%	3.300%
9/14/2007	14,636,012	116,124,098	12.604%	3.100%
10/19/2007	15,047,607	115,461,065	13.033%	3.100%
11/16/2007	19,160,312	115,461,065	16.595%	3.300%
12/14/2007	17,876,252	115,461,065	15.482%	3.400%
1/18/2008	23,437,414	118,090,675	19.847%	3.600%
2/15/2008	17,097,739	118,090,675	14.478%	3.800%
3/14/2008	23,345,778	118,090,675	19.769%	4.100%
Average			10.382%	3.188%

Notes:

[1] The Relevant Period is from December 14, 2006 to March 14, 2008.

[2] Short Interest as reported by Bloomberg L.P.

[3] Shares outstanding reported in Bear Stearns' 10-Q and 10-K filings.

[4] NYSE Exchange US Short Interest as a % of Total Shares Outstanding ("NYSIPRTS Index"). The index represents the short interest data around the 15th of the month for the current month and is later revised around the 6th of the next month.

Sources: Bloomberg L.P. and 10-K Wizard.

Attachment 24

Bruce S. Sherman v. Bear Stearns Companies Inc., et al.

Tests for Put-Call Parity Violations between December 14, 2006 and March 14, 2008

Page 1 of 2

Panel A. "Failure is an Option" Method [1] [2]

Month / Year	Average Put-Call Parity Violation [3]	Average Absolute Put-Call Parity Violation [3]	Average Put-Call Parity Violation (Near the Money) [3] [4]	Average Absolute Put-Call Parity Violation (Near the Money) [3] [4]
December 2006 [5]	-0.109%	0.126%	-0.066%	0.091%
January 2007	0.007%	0.088%	0.037%	0.078%
February 2007	0.024%	0.118%	0.043%	0.113%
March 2007	0.124%	0.204%	0.011%	0.085%
April 2007	0.156%	0.221%	0.053%	0.092%
May 2007	0.131%	0.241%	0.022%	0.099%
June 2007	0.066%	0.216%	-0.029%	0.100%
July 2007	0.209%	0.350%	0.070%	0.202%
August 2007	-0.028%	0.428%	-0.129%	0.372%
September 2007	-0.072%	0.276%	-0.109%	0.221%
October 2007	-0.001%	0.231%	-0.079%	0.146%
November 2007	-0.219%	0.352%	-0.280%	0.312%
December 2007	-0.216%	0.337%	-0.221%	0.319%
January 2008	-0.145%	0.322%	-0.157%	0.271%
February 2008	-0.101%	0.196%	-0.099%	0.182%
March 2008 [6]	-0.620%	0.713%	-0.572%	0.599%
Relevant Period	**-0.044%**	**0.287%**	**-0.056%**	**0.178%**
Number of Observations	**12,034**	**12,034**	**4,623**	**4,623**
Number of Contracts [7]	**7,553,136**	**7,553,136**	**4,196,452**	**4,196,452**

Notes:

[1] Put-Call Parity Violation = {Stock Price - [Present Value of the Strike Price + Present Value of the Dividend + Call Price - Put Price]} / Stock Price.

[2] Evans, Richard B., Christopher C. Gezvy, David K. Musto, and Adam V. Reed, "Failure is an Option: Impediments to Short Selling and Option Prices," 22 (5) *Review of Financial Studies*, 2009, pages 1955-1980.

[3] Calls and Puts are matched based on strike price and expiration date. Options with less than 6 calendar days to maturity or greater than 180 calendar days to maturity and options with a price less than $0.375 are deleted. Any call option with market price higher than the underlying stock price ($C > S_0$) and any call option with market price less than the stock price minus the present value of the strike price and also the present value of the expected dividends in the remaining life of the option ($C < S_0$ - PV(X) - PV(Dividends)) are deleted. Any put option with market price less than the option's intrinsic value ($P < X - S_0$) and any put option with market price above the strike price ($P > X$) are also deleted. Call Price and Put Price are equal to the average of the best bid anc best ask quotes.

[4] Sample is restricted to those pairs for which -0.1< ln(Stock Price/Strike Price) < 0.1.

[5] Data from December 14, 2006 to December 29, 2006.

[6] Data from March 3, 2008 to March 14, 2008.

[7] Total number of put and call contracts. Market makers change their bid and ask quotes each time the underlying stock price changes. Consequently, there are bid and ask quotes regardless of the number of contracts traded each day. Bid and ask quotes come from the NBBO data (National Best Bid and Offer).

Sources: Bloomberg L.P. and OptionMetrics.

Attachment 24

Bruce S. Sherman v. Bear Stearns Companies Inc., et al.

Tests for Put-Call Parity Violations between December 14, 2006 and March 14, 2008

Page 2 of 2

Panel B. "Limited Arbitrage and Short Sales Restrictions" Approach [1] [2]

Month / Year	Average Put-Call Parity Violation ("R") [3]	Average Absolute Put-Call Parity Violation ("R") [3]	Average Put-Call Parity Violation ("R") (Near the Money) [3] [4]	Average Absolute Put-Call Parity Violation ("R") (Near the Money) [3] [4]
December 2006 [5]	-0.1085	0.1255	-0.0658	0.0912
January 2007	0.0074	0.0878	0.0370	0.0776
February 2007	0.0239	0.1180	0.0429	0.1132
March 2007	0.1247	0.2044	0.0116	0.0851
April 2007	0.1565	0.2220	0.0535	0.0916
May 2007	0.1323	0.2420	0.0225	0.0991
June 2007	0.0664	0.2167	-0.0288	0.1001
July 2007	0.2116	0.3521	0.0709	0.2028
August 2007	-0.0256	0.4288	-0.1275	0.3718
September 2007	-0.0709	0.2764	-0.1086	0.2203
October 2007	-0.0006	0.2313	-0.0784	0.1458
November 2007	-0.2176	0.3513	-0.2793	0.3116
December 2007	-0.2150	0.3359	-0.2202	0.3180
January 2008	-0.1437	0.3222	-0.1560	0.2708
February 2008	-0.1004	0.1961	-0.0987	0.1814
March 2008 [6]	-0.6148	0.7087	-0.5677	0.5950
Relevant Period	**-0.043**	**0.287**	**-0.055**	**0.178**
Number of Observations	**12,034**	**12,034**	**4,623**	**4,623**
Number of Contracts [7]	**7,553,136**	**7,553,136**	**4,196,452**	**4,196,452**

Notes:

[1] Put-Call Parity Violation ("R") = 100 * *ln* {Stock Price / [Present Value of the Strike Price + Present Value of the Dividend + Call Price - Put Price]}.

[2] Eli Ofek, Matthew P. Richardson, and Robert F. Whitelaw, "Limited Arbitrage and Short Sales Restrictions: Evidence from the Options Markets, 74 *Journal of Financial Economics*, 2004, pages 305-342.

[3] Calls and Puts are matched based on strike price and expiration date. Options with less than 6 calendar days to maturity or greater than 180 calendar days to maturity and options with a price less than $0.375 are deleted. Any call option with market price higher than the underlying stock price ($C > S_0$) and any call option with market price less than the stock price minus the present value of the strike price and also the present value of the expected dividends in the remaining life of the option ($C < S_0$ - PV(X) - PV(Dividends)) are deleted. Any put option with market price less than the option's intrinsic value ($P < X - S_0$) and any put option with market price above the strike price ($P > X$) are also deleted. Call Price and Put Price are equal to the average of the best bid and best ask quotes.

[4] Sample is restricted to those pairs for which -0.1< ln(Stock Price/Strike Price) < 0.1.

[5] Data from December 14, 2006 to December 29, 2006.

[6] Data from March 3, 2008 to March 14, 2008.

[7] Total number of put and call contracts. Market makers change their bid and ask quotes each time the underlying stock price changes. Consequently, there are bid and ask quotes regardless of the number of contracts traded each day. Bid and ask quotes come from the NBBO data (National Best Bid and Offer).

Sources: Bloomberg L.P. and OptionMetrics.

Attachment 25
Bruce S. Sherman v. Bear Stearns Companies Inc., et al.
Non-Parametric Tests for Random Walk

Panel A. McNemar Test

Relevant Period	+,+ (a) [1]	+,- (b) [2]	-,+ (c) [3]	-,- (d) [4]	X^2 [5]	p-value [6]
12/14/2006 - 3/14/2008	68	74	74	97	0.0068	0.9345

Panel B. Wilcoxon Signed-Rank Test [7]

Relevant Period	t-statistic [8]	p-value [9]
12/14/2006 - 3/14/2008	0.2964	0.7669

Notes:

[1] Total number of observations in which a positive stock return is followed by a positive stock return the following day.

[2] Total number of observations in which a positive stock return is followed by a negative stock return the following day.

[3] Total number of observations in which a negative stock return is followed by a positive stock return the following day.

[4] Total number of observations in which a negative stock return is followed by a negative stock return the following day.

[5] X^2 is a chi-square statistic with 1 degree of freedom. The formula is rewritten to correct for discontinuity:

$$McNemar\ Statistic\ \left(X^2\right) = \frac{\left(|b-c|-1\right)^2}{b+c}$$

[6] Based on a two-tailed test.

[7] Wilcoxon signed-rank test on differences between consecutive stock returns during the Relevant Period.

[8] The Wilcoxon t-statistic correcting for both continuity and ties.

[9] The p-value for the asymptotic normal approximation to the Wilcoxon t-statistic.

Source: Bloomberg L.P.

Attachment 26
Bruce S. Sherman v. Bear Stearns Companies Inc., et al.
Quarterly Stock Price Standard Deviation and Volatility

Calendar Quarter	Standard Deviation	Annualized Volatility [1]
Q4 2006 [2]	1.21%	19.15%
Q1 2007	1.83%	29.02%
Q2 2007	1.50%	23.77%
Q3 2007	3.23%	51.22%
Q4 2007	2.76%	43.80%
Q1 2008 [3]	9.83%	156.07%

Relevant Period	Standard Deviation	Annualized Volatility [1]
12/14/2006 ~ 3/14/2008	4.56%	72.33%

Notes:
[1] Volatility is annualized assuming there are 252 trading days in a year.
[2] Data from December 14, 2006 to December 29, 2006.
[3] Data from January 2, 2008 to March 14, 2008.

Source: Bloomberg L.P.

Attachment 27

Bruce S. Sherman v. Bear Stearns Companies Inc., et al.
Parametric Tests for Serial Correlation

Panel A. Serial Correlation [1]

Using Raw Returns

Relevant Period	Number of Days	R-Square	Beta	t-statistic	p-value
12/14/2006 - 2/29/2006	11	0.0526	0.2238	0.6853	0.5104
1/3/2007 - 6/29/2007	124	0.0016	-0.0409	-0.5127	0.6091
7/2/2007 - 12/31/2007	127	0.0004	-0.0191	-0.2173	0.8284
1/2/2008 - 3/14/2008	51	0.0648	0.4666	1.2737	0.2088

Using Excess Returns [2]

Relevant Period	Number of Days	R-Square	Beta	t-statistic	p-value
12/14/2006 - 2/29/2006	11	0.0768	0.2723	0.6676	0.5211
1/3/2007 - 6/29/2007	124	0.0078	0.0890	0.9048	0.3674
7/2/2007 - 12/31/2007	127	0.0156	-0.1246	-1.3627	0.1754
1/2/2008 - 3/14/2008	51	0.3196	1.3529	1.7124	0.0931

Panel B. Portmanteau Q-Tests [3]

Using Raw Returns

Relevant Period	Number of Days	# of Lags	Q-statistic	p-value
12/14/2006 - 2/29/2006	11	1	2.3756	0.1232
		2	2.4974	0.2869
		3	2.4977	0.4757
		4	2.5087	0.6431
		5	4.8889	0.4296
1/3/2007 - 6/29/2007	124	1	0.2027	0.6525
		2	0.3128	0.8552
		3	0.3846	0.9434
		4	0.7115	0.9499
		5	2.0876	0.8369
7/2/2007 - 12/31/2007	127	1	0.0243	0.8760
		2	0.4131	0.8134
		3	0.4134	0.9375
		4	4.1266	0.3891
		5	6.1901	0.2882
1/2/2008 - 3/14/2008	51	1	1.0661	0.3018
		2	1.2631	0.5318
		3	1.2729	0.7356
		4	3.1150	0.5388
		5	3.1474	0.6773

Attachment 27

Bruce S. Sherman v. Bear Stearns Companies Inc., et al.
Parametric Tests for Serial Correlation

Using Excess Returns [2]

Relevant Period	Number of Days	# of Lags	Q-statistic	p-value
12/14/2006 - 2/29/2006	11	1	2.1913	0.1388
		2	2.4457	0.2944
		3	2.6648	0.4463
		4	3.0480	0.5498
		5	3.4055	0.6377
1/3/2007 - 6/29/2007	124	1	1.0058	0.3159
		2	8.6815	0.0130
		3	11.7854	0.0082
		4	11.9677	0.0176
		5	11.9937	0.0349
7/2/2007 - 12/31/2007	127	1	1.9599	0.1615
		2	1.9723	0.3730
		3	2.1955	0.5328
		4	4.1767	0.3826
		5	5.2022	0.3917
1/2/2008 - 3/14/2008	51	1	2.9981	0.0834
		2	3.1727	0.2047
		3	4.9339	0.1767
		4	6.1132	0.1908
		5	6.1169	0.2950

Notes:

[1] The Bear Stearns Companies, Inc. returns regressed against Bear Stearns Companies, Inc.'s prior day return.

[2] Excess or abnormal returns from Modified Fama-French Three-Factor Model.

[3] The autocorrelations of Bear Stearns Companies, Inc. returns based on a 1-day, 2-day, 3-day, 4-day, and 5-day lag.

Source: Bloomberg L.P.

Attachment 28

Bruce S. Sherman v. Bear Stearns Companies Inc., et al.

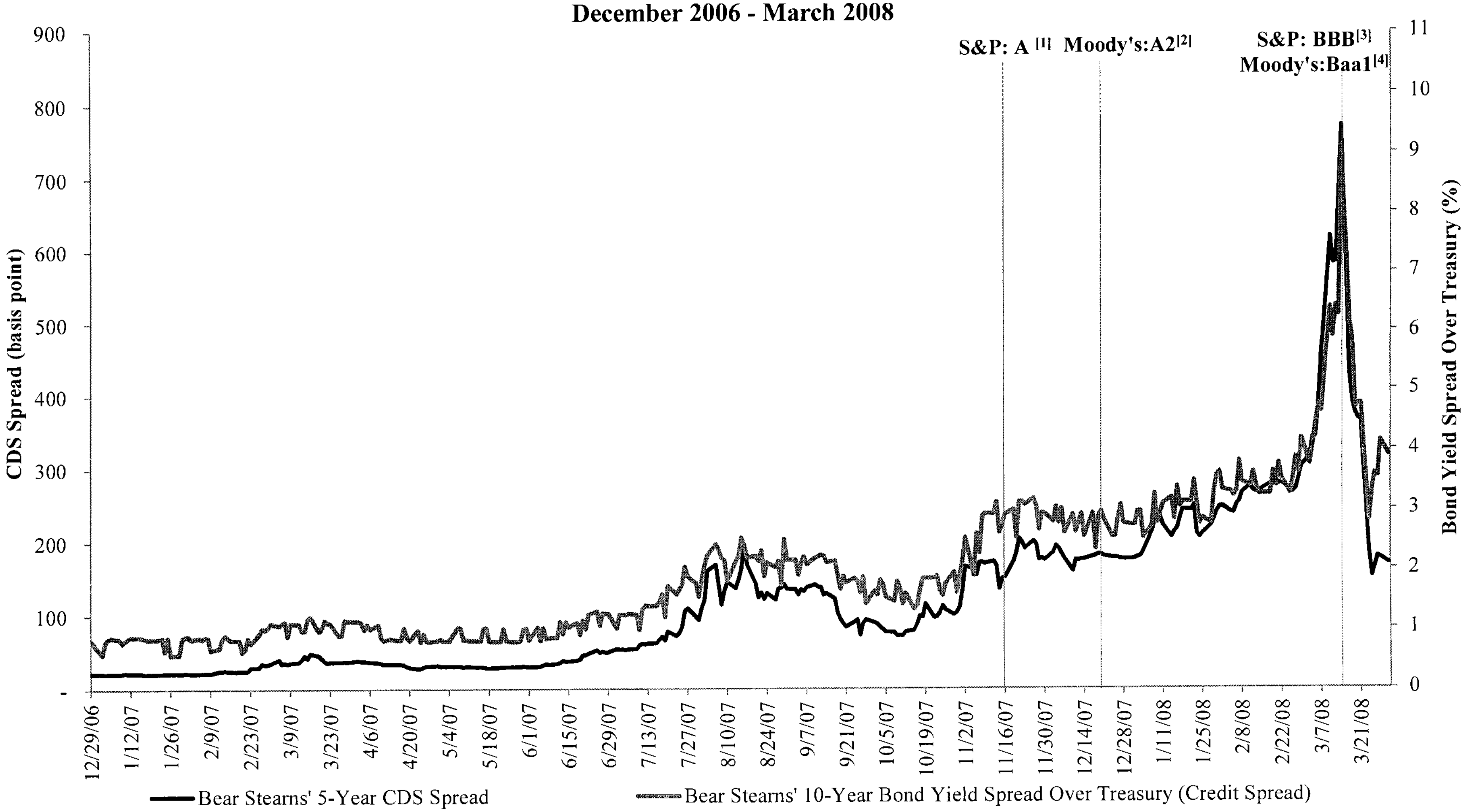
Study of Investment Banks' Relative Reliance on Short-Term Repurchase Financing, 2002 to 2007

($ Million)

	2002	2003	2004	2005	2006	2007	Average
The Bear Stearns Companies, LLC							
Securities sold under Repurchase Agreements	$ 44,469	$ 47,464	$ 58,604	$ 66,132	$ 69,750	$ 102,373	
Total Short-Term Borrowing	72,374	75,821	91,206	107,227	122,128	143,804	
Customer Payables	53,814	68,667	79,384	69,871	72,989	83,204	
Current portion of Long-Term Debt	-	-	-	-	-	9,586	
Total Long-Term Borrowing	23,681	29,430	41,343	57,548	83,650	89,294	
Current Assets	144,696	170,163	200,639	241,946	278,306	320,459	
Total Assets	184,854	212,168	255,950	287,293	350,433	395,362	
Repos/Total Short Term Borrowing	61%	63%	64%	62%	57%	71%	63%
Repos/Total Debt	46%	45%	44%	40%	34%	42%	42%
Repos/Total Assets	24%	22%	23%	23%	20%	26%	23%
Repos+Customer Payables/Current Assets	68%	68%	69%	56%	51%	58%	62%
Repos+Customer Payables/Total Assets	53%	55%	54%	47%	41%	47%	49%
Long-Term Debt/Total Assets	13%	14%	16%	20%	24%	23%	18%
Total Debt/Total Assets	52%	50%	52%	57%	59%	61%	55%
Lehman Brothers Holdings, Inc.							
Securities sold under Repurchase Agreements	$ 94,725	$ 107,304	$ 105,956	$ 116,155	$ 133,547	$ 181,732	
Total Short-Term Borrowing	117,075	138,167	149,834	170,926	202,334	300,917	
Customer Payables	17,477	27,666	-	-	41,695	61,206	
Current portion of Long-Term Debt	7,971	7,644	-	8,410	12,878	16,801	
Total Long-Term Borrowing	30,707	35,885	56,486	53,899	81,178	123,150	
Current Assets	254,582	298,778	198,117	216,951	265,205	364,540	
Total Assets	260,336	312,061	357,168	410,063	503,545	691,063	
Repos/Total Short Term Borrowing	81%	78%	71%	68%	66%	60%	71%
Repos/Total Debt	61%	59%	51%	50%	45%	41%	51%
Repos/Total Assets	36%	34%	30%	28%	27%	26%	30%
Repos+Customer Payables/Current Assets	44%	45%	53%	54%	66%	67%	55%
Repos+Customer Payables/Total Assets	43%	43%	30%	28%	35%	35%	36%
Long-Term Debt/Total Assets	12%	11%	16%	13%	16%	18%	14%
Total Debt/Total Assets	60%	58%	58%	57%	59%	64%	59%
The Goldman Sachs Group, Inc.							
Securities sold under Repurchase Agreements	$ 59,919	$ 43,084	$ 47,573	$ -	$ -	$ 159,178	
Total Short-Term Borrowing	146,902	139,744	168,430	246,310	271,278	240,405	
Customer Payables	93,697	105,513	153,221	178,304	206,884	310,118	
Current portion of Long-Term Debt	5,794	7,133	17,617	17,978	19,650	22,740	
Total Long-Term Borrowing	38,711	57,482	80,696	97,848	143,441	197,474	
Current Assets	302,539	345,602	456,706	633,703	755,218	651,120	
Total Assets	355,574	403,799	531,379	706,804	838,201	1,119,796	
Repos/Total Short Term Borrowing	41%	31%	28%	0%	0%	66%	28%
Repos/Total Debt	31%	21%	18%	0%	0%	35%	17%
Repos/Total Assets	17%	11%	9%	0%	0%	14%	8%
Repos+Customer Payables/Current Assets	51%	43%	44%	28%	27%	72%	44%
Repos+Customer Payables/Total Assets	43%	37%	38%	25%	25%	42%	35%
Long-Term Debt/Total Assets	11%	14%	15%	14%	17%	18%	15%
Total Debt/Total Assets	54%	51%	50%	51%	52%	41%	50%
Morgan Stanley							
Securities sold under Repurchase Agreements	$ 136,463	$ 147,618	$ 181,598	$ 237,274	$ 267,566	$ 162,840	
Total Short-Term Borrowing	216,237	217,119	271,839	341,732	399,705	225,107	
Customer Payables	88,229	96,794	115,653	112,246	134,907	203,453	
Current portion of Long-Term Debt	-	10,574	12,764	13,822	-	-	
Total Long-Term Borrowing	55,227	55,092	82,588	96,709	145,044	257,352	
Current Assets	465,128	514,021	639,805	787,898	979,240	864,359	
Total Assets	529,499	602,843	747,334	898,523	1,121,192	1,045,409	
Repos/Total Short Term Borrowing	63%	68%	67%	69%	67%	72%	68%
Repos/Total Debt	50%	52%	49%	52%	49%	34%	48%
Repos/Total Assets	26%	24%	24%	26%	24%	16%	23%
Repos+Customer Payables/Current Assets	48%	48%	46%	44%	41%	42%	45%
Repos+Customer Payables/Total Assets	42%	41%	40%	39%	36%	35%	39%
Long-Term Debt/Total Assets	10%	9%	11%	11%	13%	25%	13%
Total Debt/Total Assets	51%	47%	49%	50%	49%	46%	49%
Merrill Lynch & Co., Inc.							
Securities sold under Repurchase Agreements	$ 85,378	$ 96,006	$ 153,843	$ 193,067	$ 222,624	$ 235,725	
Total Short-Term Borrowing	98,371	112,087	180,058	221,389	282,774	389,839	
Customer Payables	28,569	28,859	34,381	35,619	49,414	63,582	
Current portion of Long-Term Debt	-	-	-	-	-	-	
Total Long-Term Borrowing	81,713	83,299	119,513	132,409	181,400	260,973	
Current Assets	267,501	286,069	365,349	442,494	504,946	630,943	
Total Assets	451,375	496,143	628,098	681,015	841,299	1,020,050	
Repos/Total Short Term Borrowing	87%	86%	85%	87%	79%	60%	81%
Repos/Total Debt	47%	49%	51%	55%	48%	36%	48%
Repos/Total Assets	19%	19%	24%	28%	26%	23%	23%
Repos+Customer Payables/Current Assets	43%	44%	52%	52%	54%	47%	48%
Repos+Customer Payables/Total Assets	25%	25%	30%	34%	32%	29%	29%
Long-Term Debt/Total Assets	18%	17%	19%	19%	22%	26%	20%
Total Debt/Total Assets	40%	39%	48%	52%	55%	64%	50%

Highly Confidential

Attachment 29
Bruce S. Sherman v. Bear Stearns Companies Inc., et al.
Corporate Bond Credit Spreads, Credit Default Swap Spreads, and Credit Ratings
December 2006 - March 2008



Sources: Bloomberg L.P.
[1] S&P Issuer Credit Rating on Bear Stearns was 'A' effective on 11/15/2007.
[2] Moody's Issuer Credit Rating on Bear Stearns was 'A2' effective on 12/20/2007.
[3] S&P Issuer Credit Rating on Bear Stearns was 'BBB' effective on 3/14/2008.
[4] Moody's Issuer Credit Rating on Bear Stearns was 'Baa1' effective on 3/17/2008.

Attachment 30
Bruce S. Sherman v. Bear Stearns Companies Inc., et al.
Summary of News Items during the Leakage Period

Effective Trading Date	Actual Return	Abnormal Return	Significant Level of Abnormal Return [1]	Economically Significant News [2]	Summary of News Items
12/20/2007	0.91%	0.74%		Yes	Fraud-Related: Bear Stearns sued by Barclays Unit Over Hedge Fund Collapse. Molinaro said CDO portfolio is fully hedged. Analyst at Punk Ziefel & Company said, "there may be a confidence crisis among buyers... A surprisingly large amount of the newly structured finance products had been poorly underwritten and poorly structured." Analyst at Deutsche Bank reported, "since the company only had $800 million of subprime exposure remaining after it had announced $1.2 billion of writedowns...**we don't know why they had these additional write-downs**." Analyst at Wachovia stated, "The company indicated that its capital position was sufficient even before the investment from Citic.**We suspect it is from a regulatory standpoint but is likely not sufficient from industry competitive standpoint**." Analysts lowered their estimates for Bear Stearns. Non-Fraud-Related: Bear released FY2007 and 4Q report, $1.9 billion mortgage related write down (exceeded earlier estimate by $700 million), revenue loss $379 million or -$6.9 per share (consensus was -$1.69). Bear declared $0.32 quarterly dividend. Bear said executive committee won't get bonuses. Bruce Foerster said Bear Stearns May Need New Leadership. Bear's ratings remained the same by S&P, Moody's, DBRS.
12/21/2007	-1.61%	-5.46%	***	Yes	Fraud-Related: Analyst at CIBC stated, "problems at Bear are not limited to mortgages, other business areas are concerning as well." Court Tosses Ruling Bear Stearns Must Pay $125 Million in Hedge Fund Fraud. **CNBC commentator says sources indicate Bear in talks with Fortress for additional capital infusion**. Rumors circulating that "there would be additional needs for capital." Non-Fraud-Related: Moody's downgraded Bear Stearns based on higher than anticipated rates of delinquency, foreclosure, and REO in the underlying collateral relative to credit enhancement levels. Bear Stearns wins 20% Share of LME Electronic Trade. Share price forecast was cut 11% by Bernstein.
12/24/2007	-1.28%	-2.29%	***	Yes	Non-Fraud-Related: Bear Stearns was sued by FIC in class action over the hedge funds' collapse. Former Bear investment bankers was pleaded guilty to fraud for bid-rigging in municipal bonds.
1/4/2008	-5.92%	-2.74%	***	Yes	Non-Fraud-Related: CNBC reported that the U.S. attorney's office is ramping up their investigation of BSC regarding the two hedge funds that blew up last year. US Attorney interviewed Bear Stearns fund
1/7/2008	-3.32%	-2.04%	**	Yes	Non-Fraud-Related: The Wall Street Journal reported that "Cayne started notifying Bear Stearns' board on Sunday that he plans to give up his post but remain as chairman, the Journal reported on its web site, citing unnamed people familiar with the matter." Nat Singer, who headed the municipal derivatives group at Bear Stearns Cos., is leaving Bear.

Effective Trading Date	Actual Return	Abnormal Return	Significant Level of Abnormal Return [1]	Economically Significant News [2]	Summary of News Items
1/8/2008	-6.66%	-2.49%	***	Yes	Fraud-Related: Bear's CEO James Cayne to step down, WSJ Reported, Schwartz was likely to be named Bear Stearns' new CEO. Analyst at Punk Ziegel & Company stated, "The new price target for Bear Stearns is $67 per share down from $94 per share. The recommendation on the stock continues to be Sell...Moreover, it **apparently never had an adequate risk management system in place**...His [Cayne] maintaining the post of Chairman is totally inappropriate and an indication that this company's Board has no intention of placing theshareholder first...Mr. Schwartz is the right choice for the new CEO." Non-Fraud-Related: Bear Stearns expressed interest in extending its operations to Pakistan. California hired Bear Stearns to manage the sale of the state's student loan servicing agency. Hintz, an analyst at Sanford C. Bernstein & Co., said Bear Stearns won't be sold. Moody's downgraded Bear Stearns' Alt-A deals based on higher than anticipated rates of delinquency, foreclosure, and REO in the underlying collateral. Matthew Albrecht, an analyst at Standard & Poor's, said Bear Stearns needs to diversify. Analyst at Rapid Ratings stated, "the Company's rating was B3 (66) indicating moderate credit risk. As well, the share price is moderately undershooting the credit rating, indicating a strong buy. In summary, Bear Stearns is an investment grade company, while the share price is overestimating the level of credit risk."
1/9/2008	5.13%	3.23%	***	Yes	Fraud-Related: Bear Stearns CEO in a CNBC interview said "there's no need to raise additional capital. Bear Stearns Cos. is **"adequately marked" to market on its investments and the securities firm is "comfortable with its position."** Analyst at Buckingham Research Group believed the replacement of Bear's CEO was "a net positive... though, is clearly only incremental for the stock. The market is much more focused on the uncertainty surrounding the capital markets environment and the fundamentals." There were "two positive for BSC that seem overlooked: **1) BSC stated that their capital position was "strong", implying no dilutive capital injections are in the offing**; and 2) there is dramatic comp leverage in '08 coming from $250 million in cost savings ($1 per share in EPS) and a change in counting for employee stock awards (close to $2 in EPS in '08). Non-Fraud-Related: BSC named President Alan Schwartz to be the new CEO, replacing Jimmy Cayne. Mr. Cayne would retire from the firm, stay on as chairman of the board of directors, and be succeeded as chief executive officer by Bear Stearns president Alan D. Schwartz. Bear Stearns chief Alan Schwartz vowed to return the investment bank and ruled out looking for a buyer for the embattled firm, which led to speculation it might be ripe for takeover but Schwartz quickly scotched the suggestion, saying: "Being acquired is not a strategy." Fitch upgraded Bear Stearns Commercial Mortgage Securities Trust 2004-TOP16 and commercial mortgage pass-through certificates, series 2000-WF2. Bear Stearns was closing a hedge fund that invested in asset-backed securities after it plummeted at least 39% last year, losing more than $300 million between August and the end of November.
1/10/2008	3.92%	0.76%		Yes	Non-Fraud-Related: Bloomberg reported that Goldman cut their Bear Stearns (BSC 74.82) target to $79 from $96. Goldman also cut their targets on other financial stocks: MS, JPM, LEH, MER and C.
1/11/2008	3.18%	2.26%	***	Yes	Non-Fraud-Related: Shares in Bear Stearns were raised to "buy" by Merrill Lynch & Co. analysts, who cited a low price for the stock relative to the company's assets. Alan Schwartz, the new CEO of Bear Stearns, planned to speed growth in the fifth-biggest U.S. securities firm's international business through joint ventures with local companies. A Credit Suisse analyst reported a healthy global GDP growth and a recovery in the capital markets and did not change estimate for Bear.
1/15/2008	-5.17%	-0.67%		Yes	Non-Fraud-Related: Michael Minikes was named chief executive officer of Bear Stearns Securities Corp. (BSSC), through which the global clearing operations were conducted, and that Robert Upton will assume the title of treasurer of The Bear Stearns Companies Inc. Bear Stearns share-price forecast was cut by Lehman.
1/16/2008	1.91%	-0.76%		Yes	Non-Fraud-Related: Moody's downgraded twenty four tranches of Bear Stearns mortgages and placed under review for possible downgrade the ratings of seven tranches from five transactions issued by Bear Stearns Mortgage Funding Trust in 2007 based on higher than anticipated rates of delinquency, foreclosure, and REO in the underlying collateral relative to credit enhancement levels.
1/18/2008	-2.75%	-2.48%	***	Yes	Non-Fraud-Related: Fitch Ratings affirmed Bear Stearns Commercial Mortgage Securities, commercial mortgage pass-through certificates, series 1999-WF2, and Commercial Mortgage Securities Trust's commercial mortgage pass-through certificates, series 2006-PWR14. Bear Stearns investors won an approval from a federal judge of a settlement with the company over claims it helped perpetrate a fraud that led to an $8.6 billion drop in McKesson Corp.'s market value, bringing investors' total recovery in the case to $1.04 billion.

Attachment 10
Bruce S. Sherman v. Bear Stearns Companies Inc., et al.
Summary of News Items during the Leakage Period

Effective Trading Date	Actual Return	Abnormal Return	Significant Level of Abnormal Return [1]	Economically Significant News [2]	Summary of News Items
1/22/2008	7.53%	3.81%	***	Yes	Non-Fraud-Related: Maybach Financial Group added The Bear Stearns Companies to its watch list due to higher than average trading volume. Bear Stearns February volatility elevated at 62 on renewed buyout chatter.
1/23/2008	11.77%	5.50%	***	No	Non-Fraud-Related: Estimated net asset value per share for Bear Stearns Private Equity Limited as at 31 December 2007: Ordinary Share Class - $1.70, Zero Dividend Preference Share Class - 49.54p, Packaged Unit - $2.68
1/24/2008	0.85%	1.45%	*	No	Non-Fraud-Related: Seven Summits Research released alerts on INTC, BSC, LMT, and RAI.
1/25/2008	-0.81%	3.13%	***	No	Non-Fraud-Related: Bear Stearns Private Equity Limited announced that it has accepted in full the following shares tendered to it at the applicable Net Asset Value per share as at 31 December 2007: 24,460,438 equity shares at a price of USD$1.70 per share, 274,822 zero dividend preference shares at a price of 49.54 pence per share. The date of the purchase will be January 29, 2008.
1/28/2008	4.68%	1.58%	*	No	Non-Fraud-Related: Thomas Maheras, who was replaced as head of trading at Citigroup last year, was in talks with Bear Stearns about becoming head of trading operations, the New York Times reported.
1/30/2008	-3.63%	-3.34%	***	Yes	Fraud-Related: **Bear Stearns's Level 3 share exceeds rivals'.** Banks and securities firms worldwide have written down more than $138 billion in the value of their subprime assets, leading to record losses: Bear Stearns $28.17, Morgan Stanley $73.65, Goldman Sachs $69.15, Lehman Brothers $41.9. Non-Fraud-Related: Zacks.com rated Merrill Lynch & Co.and Bear Stearns Co. as strong sell stocks.
2/1/2008	3.61%	1.43%	*	No	Non-Fraud-Related: Moody's confirmed the ratings of four classes of Bear Stearns Commercial Mortgage Securities, 1999-CLF1; Placed one class on review for possible downgrade due to the decline in credit quality of the pool. Approximately $239.9 Million of Structured Securities Affected.
2/4/2008	-2.03%	0.09%		Yes	Non-Fraud-Related: Analyst at New Constructs LLC deemed Bear Stearns' stocks a Dangerous Risk/Reward Rating because there was a relatively large difference between the expected financial performance implied by its market price and the company's historical performance. Bear Stearns was raised to "market perform" from "sell" by analyst Richard Bove at Punk, Ziegel & Company. Fitch Ratings affirmed the following Bear Stearns Commercial Mortgage Securities Inc. Trust pass-through certificates, series 2006-PWR11. Rapid Ratings changed Bear Stearns' equity recommendation from hold to buy due to share price changes which has recently remained more or less stable. "BSC's current share price overestimates the level of risk. The market is undervaluing the company."
2/6/2008	-4.48%	-2.74%	***	No	Non-Fraud-Related: The estimated net asset value per share for Bear Stearns Private Equity Limited as of January 18 2008: Ordinary Share Class - $1.69 Zero Dividend Preference Share Class - 49.71p Packaged Unit - $2.66. ValuEngine issued a Hold recommendation for Bear Stearns based on the company's attractive expected EPS growth and company size, but UNATTRACTIVE momentum and P/E ratio.

Effective Trading Date	Actual Return	Abnormal Return	Significant Level of Abnormal Return [1]	Economically Significant News [2]	Summary of News Items
2/8/2008	-2.84%	-0.49%		Yes	Fraud-Related: Samuel L. Molinaro Jr., chief operating officer and chief financial officer presented at the Credit Suisse Financial Services in the morning. An analyst from Punk Ziegel & Company reported that "It seems to me that the main strategy that is now being employed is to attract capital whenever possible so that questionable assets can be held on balance sheets as long as is necessary. The strategy can work if the assets have been marked to market appropriately and the asset in question is still paying interest. Bear Stearns has clearly adopted this approach...It has been working hard to shift its source of funding. **In the past 12 months, the company has made extensive use of the repo markets** here and abroad...At the same time, the firm is marking down the value of its more questionable securities. Bear has actually gone to a net short position in its CDO/sub-prime portfolio...A second strategy is to recategorize assets from Level I or Level II into the Level III segment. Therefore, the company is able to value the asset on a discounted cash flow basis. Since many of the assets in question are paying interest on a timely basis, **using this technique yields a higher valuation and a lower mark-down. Bear Stearns has increased its Level III asset by $7.9 billion in the past three months, or 38.9%**...It should also be noted that there are techniques available to firms if the monoline debt insurers were to be downgraded en masse or become insolvent. The holder of what would now be an uninsured security can over-collateralize it and regain a AAA rating. Or the security holder could set up a first-loss tranche. Plus, there is a growing market for distressed debt. In this case, it is not the debt that is distressed but the seller of the debt. Bear is actively looking to buy these products." An analyst from Credit Suisse reported that "The firm remains net short subprime exposure (roughly $1 billion net short), but is not immune to the broader credit market deterioration experienced year to date. In terms of leveraged finance—an oft cited concern this week—Bear's unfunded commitments are down to $0; funded exposure, while not disclosed, is small enough such that incremental mark-downs are expected to be immaterial. In terms of the balance sheet... capital is fine; the funding mix has been improved (more secured; less reliance on CP), and the liquidity profile has been enhanced." Non-Fraud-Related: Bear Stearns cut 800 mortgage employees, 1400 overall which is 10% of its 2007 head count ($250 million of compensation expense.) Bear increased position by more than 1B on the wager, a "short" position on subprime mortgage securities. The company also reduced its holdings of collateralized debt obligations and underlying bonds, CFO Molinaro said.
2/11/2008	-1.13%	-0.25%		Yes	Fraud-Related: Bear Stearns saw up to $175 billion in financial write downs. Non-Fraud-Related: JPMorgan Chase, Bear Stearns, and other banks were seeking cheap Subprime Deals, Wall Street Journal said.
2/12/2008	-1.04%	0.50%		Yes	Fraud-Related: Bear's Asset-Backed Hedge Fund "is liquidating" after falling "52.5% last year after reducing the value of the assets it holds" based on a new valuation technique that "uses the lowest price quote from banks and securities firms for assets held by the fund." While New York-based **Bear Stearns previously used an average of quotes, it stopped because prices started to vary widely.** Non-Fraud-Related:
2/13/2008	2.03%	1.63%	**	No	Non-Fraud-Related: SEC No-Action Letter, The Bear Stearns Companies Inc. Bear Stearns .25% Notes Due 2009 Trades as a Single Issue, fungible tranche no longer exists.
2/14/2008	-2.56%	-0.59%		Yes	Fraud-Related: Citic Securities Co. and Bear Stearns Cos. might lift their stakes in each other now that both their shares have fallen. Non-Fraud-Related: Goldman, Bear Stearns, Lehman EPS estiamtes were cut at KBW. Bear Stearns 1Q EPS estmate was cut to $0.90 from $1.06 at Lehman.
2/15/2008	5.51%	4.66%	***	Yes	Fraud-Related: Prosecutors were investigating whether any conflicting statements by Cioffi and co-manager Matthew Tannin constitute fraud, the Journal said. Analyst at Fox-Pitt Kelton stated "We are lowering our fiscal 1Q08 EPS est. to $1.60 from $2.20, reflecting continued challenges in credit mkts, particularly on the corporate side. We are lowering our FY08 EPS est. to $9.46 from $11.76...Given the **lack of liquidity in many credit mkts**, we expect $820 mil. in net write downs...Bear is very inexpensive at 1x book and we see no justification for this, given that the collapse of its two proprietary hedge funds is in the rear view mirror...Bear's levgd loan exposure, the worst of the current issues, is the lowest in the group. Non-Fraud-Related: Bear Stearns running to HoD; takeover chatter is catalyst
2/22/2008	3.56%	1.48%	*	No	Non-Fraud-Related: BSC: Bear Stearns trading at session highs as takeover chatter returns.
2/25/2008	1.83%	0.16%		Yes	Non-Fraud-Related: Goldman Sachs cut Bear Stearns, 1Q 2008 profit estimates and reported that Bear Stearns may further report a $1.4 billion write-down. Moody's affirmed 12 classes of Bear Stearns Commercial Mortgage Securities, Inc., Series 2006-BBA7, approximately $599.5 Million of Structured Securities affected.

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Summary of News Items during the Leakage Period

Effective Trading Date	Actual Return	Abnormal Return	Significant Level of Abnormal Return [1]	Economically Significant News [2]	Summary of News Items
2/28/2008	-3.53%	-0.08%		Yes	Fraud-Related: Analyst at Deutsche Bank lowered Bear Stearns' 1Q08E EPS from $2.16 to $1.48 and F2008 from $9.00 to $8.05, 2009 from $9.75 to $9.40 on **greater than expected mark-to-market losses** and somewhat **weaker fundamentals**.
3/3/2008	-3.18%	-0.81%		Yes	Fraud-Related: The Securities Law Firm of Klayman & Toskes, P.A. announced that it was accepting claims against Bear Stearns on behalf of investors around the world, who sustained losses in the High-Grade Structured Credit Strategies and High-grade Structured Credit Strategies Enhanced Leverage Funds ("the Bear Funds"). Combined, the Bear Funds had investor capital of about $1.56 billion. Non-Fraud-Related: Bear Stearns's Stephen Salvadore and former JPMorgan Chase & Co. banker James Hertz were targets of the antitrust investigation of Wall Street's sales of derivatives and investment contracts to state and local governments. Bear Stearns Cos. and Lehman Brothers Holdings Inc. had their first-quarter earnings estimates cut by Merrill Lynch & Co. analyst Guy Moszkowski as the subprime-mortgage collapse spreads to other markets.
3/5/2008	-1.80%	-1.94%	**	Yes	Fraud-Related: Bear Stearns Estimates Cut by S&P Equity Analyst "on **expectations of more writedowns" and "reputational damage" caused by the collapse of the two hedge funds**. Citic Group chairman said Bear Stearns deal was approved by U.S. Non-Fraud-Related: Bear Stearns joined German Energy Exchange to trade electricity.
3/6/2008	-7.76%	-2.86%	***	Yes	Non-Fraud-Related: Bear Stearns, Goldman, and Lehman profit estimates were cut at KEEFE. M&A Chairman Friedman was leaving Bear. Microsoft Taps Bear Stearns CEO To Assist In Yahoo! Deal.
3/10/2008	-11.10%	-7.07%	***	Yes	Fraud-Related: Bear Stearns Allan Greenberg told CNBC that **liquidity rumors are totally ridiculous**. Bear Stearns dropped on cash crunch rumors. Bear Stearns **shares dropped on liquidity concerns.** **Bank, broker bond risk soared on Bear Stearns capital concerns.** EPS & capital infusion chatter BSC is recently off on its lows at $69.93 on **unconfirmed chatter Wilbur Ross could make a capital infusion in BSC**. Non-Fraud-Related: Analyst at Pricetarget Research stated, "Bear Stearns Companies' Price Target of $140 represents a 100% change from its current price of $70.08."New warrants issue linked to the Bear Stearns ISIS Index and the Dow Jones Euro STOXX 50 Index. Bear launched new ETF to trade short-term fixed income instruments. Moody's downgraded Bear Sterns' Alt-A deals.
3/11/2008	1.08%	-6.59%	***	Yes	Fraud-Related: Bear Stearns fell 9.3%, the most since 1998, on speculation the company lacks sufficient access to capital. Bear denied market rumors regarding the firm's liquidity. News reporter saw no news to explain what forced Bear deep into the red to new five-year lows but suspected that the big volume spike on the downside is news driven. Multiple news cited to Punk Ziegel's Bove's statement that Bear needs a new business model and the company will probably be forced to merge. "We have a good deal of comfort about the capital cushions at these firms at the moment," Cox told reporters today in Washington. Bear is getting attacked on earnings, on the value of the assets, and on the liquidity of those assets. Non-Fraud-Related: Bear Stearns acquires 15% interest in forestry company. Bear Stearns private equity targeting raising $250-350 million. Fitch Ratings upgrades Bear Stearns Commercial Mortgage Securities Inc.'s mortgage pass-through certificates, series 2003-PWR2. The second-largest shareholder of Bear isn't selling any of his stake. Faber on CNBC says one plausible explanation for weakness in BSC is that people are shorting the stock rather than buying credit default swaps, which have become expensive.

Attachment 30
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Summary of News Items during the Leakage Period

Effective Trading Date	Actual Return	Abnormal Return	Significant Level of Abnormal Return [1]	Economically Significant News [2]	Summary of News Items
3/13/2008	-7.44%	-9.53%	***	Yes	Fraud-Related: Bear said the pace of withdrawal could outstrip the company's resources. Some hedge funds that use Bear as a prime broker also have been shifting portions of their business to other firms in recent weeks. A WSJ story rehashed recent concerns on BSC, noting that traders have been reluctant to engage in long-term transactions such as credit-default swaps with Bear Stearns as the counterparty are. CNBC reiterated the same issues. A finance professor at New York University's Stern said, ``The real problem at Bear Stearns is that this is eating into some of their key businesses," such as clearing and prime brokerage. Non-Fraud-Related: Bear is maintaining their 1Q08 EPS est of $0.90 (vs. $0.90 consensus).
3/14/2008	-47.37%	-41.08%	***	Yes	Fraud-Related: "Bear's stock has followed a similar pattern in recent days, plunging early on fresh rumors of dire problems, before partly recovering on more positive comments from Bear executives." Brad Hintz, an analyst at Sanford Bernstein, said investors had not been convinced by the statements from Bear executives. "The exercise [BSC admitted liquidity problems within 24 hours] backfired royally." Mark Grant from Southwest Securities said, the crisis at Bear Stearns "was probably caused by mark to markets in the kinds of mortgage products or debt, tier one, tier two and three, that they have. It may have hit the wall in terms of markdowns enough that it raised the capital issues but the situation didn't come about in the last 24 hours." Bear Stearns comfortable with EPS range, coverage ratio has increased, and no material changes in liquidity ratios. Bear Stearns said rumors led to lack of capacity. Bear Stearns said no significant mark-to-market hits since 2/29/2008. Non-Fraud-Related: Federal Reserve may have decided this week to inject $200 billion in the money market to prevent the collapse of Bear Stearns. Brad Hintz, an analyst at Sanford Bernstein, said and investors were skeptical that Monday's move by the Federal Reserve to allow banks such as Bear temporarily to trade certain mortgage backed and other securities for Treasuries would be enough. JPMorgan Chase is providing secured funding to Bear for 28 days, backstopped by the Federal Reserve Bank of New York. US stocks rose first on the Fed's decision to provide funding to Bear and government report shows that inflation ground to a halt. US stocks fell after Fitch Ratings said bank losses will be higher than expected. Jamie Dimon would be interested in buying all or part of Bear Stearns Cos. The London Metal Exchange said Bear Stearns Cos. remains an exchange member. Bear Stearns Offering $91 Million of Municipal Bonds for Sale. Bear Stearns was cut to underperform at Oppenheimer, downgraded by S&P and Fitch.

Notes:

[1] *, **, and *** denote statistical significance at the 10%, 5%, and 1% level, respectively.

[2] Bear Stearns-related economically significant news items released on the effective trading date that are not explained by the Modified Fama-French Model, which includes market and industry wide factors.

Sources: Bloomberg L.P. and Thomson One.

Attachment 31

Bruce S. Sherman v. Bear Stearns Companies Inc., et al.

Calculation of But-for Price and Inflation per Share of Bear Stearns' Common Stock during the Relevant Period

Date	BSC Price	BSC Volume	BSC Total Return	Abnormal Return	Sig[1]	Calculation of But-for Price and Inflation: Non-Fraud Related[2]	Expected Return	Adjusted Expected Return	Back-wardation	But-For Price	Inflation
12/14/06	159.96	3,214,700	2.61%	1.80%	**					80.87	79.09
12/15/06	163.68	2,537,700	2.33%	2.06%	**					84.59	79.09
12/18/06	164.34	1,484,000	0.40%	-0.33%						85.25	79.09
12/19/06	164.59	1,363,200	0.15%	0.43%						85.50	79.09
12/20/06	165.32	1,135,200	0.44%	-0.09%						86.23	79.09
12/21/06	163.30	1,302,800	-1.22%	-0.45%						84.21	79.09
12/22/06	162.19	1,116,300	-0.68%	-0.16%						83.10	79.09
12/26/06	162.80	518,600	0.38%	-0.81%						83.71	79.09
12/27/06	164.56	646,700	1.08%	-0.27%						85.47	79.09
12/28/06	163.35	590,000	-0.74%	-0.42%						84.26	79.09
12/29/06	162.78	840,600	-0.35%	0.08%						83.69	79.09
01/03/07	162.83	1,827,600	0.03%	-0.68%						83.74	79.09
01/04/07	162.64	1,002,400	-0.12%	0.92%						83.55	79.09
01/05/07	162.32	1,368,800	-0.20%	0.41%						83.23	79.09
01/08/07	164.99	1,245,200	1.64%	-0.10%						85.90	79.09
01/09/07	165.25	1,212,100	0.16%	0.14%						86.16	79.09
01/10/07	168.68	2,089,000	2.08%	0.74%						89.59	79.09
01/11/07	170.65	1,660,500	1.36%	-0.25%						91.56	79.09
01/12/07	171.51	1,506,200	0.50%	-0.54%						92.42	79.09
01/16/07	170.62	1,167,200	-0.52%	-0.33%						91.53	79.09
01/17/07	171.22	1,202,300	0.35%	0.58%						92.13	79.09
01/18/07	169.23	1,347,900	-1.16%	0.34%						90.14	79.09
01/19/07	169.91	955,200	0.40%	-0.02%						90.82	79.09
01/22/07	169.21	1,256,200	-0.41%	-1.23%						90.12	79.09
01/23/07	166.50	1,800,900	-1.60%	-1.20%						87.41	79.09
01/24/07	169.85	1,021,100	2.01%	-0.53%						90.76	79.09
01/25/07	164.72	1,889,300	-3.02%	0.02%						85.63	79.09
01/26/07	164.07	1,451,000	-0.39%	-0.48%						84.98	79.09
01/29/07	162.05	1,545,000	-1.23%	0.23%						82.96	79.09
01/30/07	162.80	1,230,900	0.46%	0.23%						83.71	79.09
01/31/07	164.85	1,308,800	1.26%	-0.23%						85.76	79.09
02/01/07	165.28	1,408,800	0.26%	-0.92%						86.19	79.09
02/02/07	166.35	905,200	0.65%	0.12%						87.26	79.09
02/05/07	165.06	992,800	-0.78%	-0.41%						85.97	79.09
02/06/07	166.15	1,270,200	0.66%	0.59%						87.06	79.09
02/07/07	166.44	623,400	0.17%	0.00%						87.35	79.09
02/08/07	163.75	1,766,100	-1.62%	-1.29%						84.66	79.09
02/09/07	159.73	2,850,300	-2.45%	-1.12%						80.64	79.09
02/12/07	157.30	2,339,352	-1.52%	-0.31%						78.21	79.09
02/13/07	160.10	1,932,337	1.78%	0.90%						81.01	79.09
02/14/07	165.81	2,568,086	3.57%	1.79%	**					86.72	79.09
02/15/07	167.10	1,860,200	0.78%	0.79%						88.01	79.09
02/16/07	167.19	1,264,300	0.05%	0.45%						88.10	79.09
02/20/07	169.43	1,537,200	1.34%	0.41%						90.34	79.09
02/21/07	168.12	1,396,800	-0.77%	-0.46%						89.03	79.09
02/22/07	166.08	2,255,500	-1.21%	-0.67%						86.99	79.09
02/23/07	161.29	3,071,300	-2.88%	-0.67%						82.20	79.09
02/26/07	158.23	2,921,947	-1.90%	0.07%						79.14	79.09
02/27/07	152.31	4,445,400	-3.74%	1.50%	*					73.22	79.09
02/28/07	152.24	5,114,600	-0.05%	-0.62%						73.15	79.09
03/01/07	151.72	4,625,639	-0.34%	-0.01%						72.63	79.09
03/02/07	147.49	3,584,300	-2.79%	-0.88%						68.40	79.09
03/05/07	144.50	4,896,600	-2.03%	0.55%						65.41	79.09
03/06/07	149.00	4,705,450	3.11%	-0.14%						69.91	79.09
03/07/07	149.37	3,277,200	0.25%	0.44%						70.28	79.09

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Calculation of But-for Price and Inflation per Share of Bear Stearns' Common Stock during the Relevant Period

Date	BSC Price	BSC Volume	BSC Total Return	Abnormal Return	Sig[1]	Non-Fraud Related[2]	Expected Return	Adjusted Expected Return	Back-wardation	But-For Price	Inflation
						Calculation of But-for Price and Inflation					
03/08/07	152.06	3,026,800	1.80%	-0.09%						72.97	79.09
03/09/07	151.98	2,573,200	-0.05%	-0.61%						72.89	79.09
03/12/07	153.15	3,109,300	0.77%	0.28%						74.06	79.09
03/13/07	142.97	7,722,700	-6.65%	-2.65%	***					63.88	79.09
03/14/07	145.29	10,282,300	1.62%	0.97%						66.20	79.09
03/15/07	148.50	6,060,040	2.21%	1.24%						69.41	79.09
03/16/07	145.48	3,865,699	-2.03%	-1.08%						66.39	79.09
03/19/07	147.12	2,115,000	1.13%	-0.51%						68.03	79.09
03/20/07	147.32	2,225,200	0.14%	-0.65%						68.23	79.09
03/21/07	152.49	4,190,817	3.51%	-0.70%						73.40	79.09
03/22/07	150.57	2,904,668	-1.26%	-0.70%						71.48	79.09
03/23/07	152.97	2,084,100	1.59%	0.86%						73.88	79.09
03/26/07	151.17	3,002,500	-1.18%	-0.73%						72.08	79.09
03/27/07	148.86	2,704,200	-1.53%	-0.25%						69.77	79.09
03/28/07	147.57	2,832,600	-0.87%	0.86%						68.48	79.09
03/29/07	151.08	4,461,500	2.38%	2.52%	***					71.99	79.09
03/30/07	150.35	2,187,006	-0.48%	-0.48%						71.26	79.09
04/02/07	148.44	2,071,400	-1.27%	-1.44%	*					69.35	79.09
04/03/07	150.88	1,826,380	1.64%	-0.75%						71.79	79.09
04/04/07	150.95	1,397,088	0.05%	0.30%						71.86	79.09
04/05/07	150.40	951,500	-0.36%	-0.68%						71.31	79.09
04/09/07	149.00	1,946,401	-0.93%	-1.47%	*					69.91	79.09
04/10/07	147.45	2,166,700	-1.04%	-1.05%						68.36	79.09
04/11/07	147.78	2,313,200	0.22%	1.19%						68.69	79.09
04/12/07	148.26	1,847,700	0.32%	-0.01%						69.17	79.09
04/13/07	147.44	1,579,864	-0.34%	-0.41%						68.35	79.09
04/16/07	153.83	2,915,900	4.33%	0.80%						74.74	79.09
04/17/07	153.77	2,724,370	-0.04%	0.11%						74.68	79.09
04/18/07	157.02	3,006,700	2.11%	1.07%						77.93	79.09
04/19/07	157.37	2,641,515	0.22%	0.00%						78.28	79.09
04/20/07	156.60	2,661,104	-0.49%	-1.56%	*					77.51	79.09
04/23/07	157.30	1,874,371	0.45%	0.12%						78.21	79.09
04/24/07	157.59	1,746,400	0.18%	1.07%						78.50	79.09
04/25/07	158.39	2,018,082	0.51%	-0.99%						79.30	79.09
04/26/07	157.74	1,779,624	-0.41%	-0.10%						78.65	79.09
04/27/07	157.58	1,273,030	-0.10%	0.25%						78.49	79.09
04/30/07	155.70	1,169,845	-1.19%	0.19%						76.61	79.09
05/01/07	155.82	1,567,588	0.08%	-0.03%						76.73	79.09
05/02/07	155.96	1,202,857	0.09%	-0.60%						76.87	79.09
05/03/07	156.25	1,916,104	0.19%	-0.70%						77.16	79.09
05/04/07	157.77	1,395,200	0.97%	-0.75%						78.68	79.09
05/07/07	155.85	1,489,275	-1.22%	-0.76%						76.76	79.09
05/08/07	153.39	1,732,200	-1.58%	-0.68%						74.30	79.09
05/09/07	155.56	1,363,100	1.41%	0.46%						76.47	79.09
05/10/07	153.53	1,396,600	-1.30%	0.45%						74.44	79.09
05/11/07	156.40	1,411,594	1.87%	0.05%						77.31	79.09
05/14/07	153.85	1,335,500	-1.63%	-0.88%						74.76	79.09
05/15/07	150.55	2,733,317	-2.14%	-1.23%						71.46	79.09
05/16/07	149.58	2,691,717	-0.64%	-1.48%	*					70.49	79.09
05/17/07	148.51	2,152,300	-0.72%	-0.62%						69.42	79.09
05/18/07	149.57	1,816,600	0.71%	-0.85%						70.48	79.09
05/21/07	151.07	2,978,900	1.00%	0.88%						71.98	79.09
05/22/07	151.66	1,394,254	0.39%	0.03%						72.57	79.09
05/23/07	152.35	1,580,158	0.45%	0.71%						73.26	79.09
05/24/07	147.55	3,391,854	-3.15%	-1.78%	**					68.46	79.09

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Calculation of But-for Price and Inflation per Share of Bear Stearns' Common Stock during the Relevant Period

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Date	BSC Price	BSC Volume	BSC Total Return	Abnormal Return	Sig[1]	Non-Fraud Related[2]	Expected Return	Adjusted Expected Return	Back-wardation	But-For Price	Inflation
						Calculation of But-for Price and Inflation					
05/25/07	146.86	2,814,044	-0.47%	-0.15%						67.77	79.09
05/29/07	148.89	1,582,840	1.38%	0.18%						69.80	79.09
05/30/07	150.00	1,496,212	0.75%	-0.27%						70.91	79.09
05/31/07	149.96	1,698,036	-0.03%	0.17%						70.87	79.09
06/01/07	153.50	2,769,111	2.36%	1.51%	*					74.41	79.09
06/04/07	152.16	1,941,048	-0.87%	-0.21%						73.07	79.09
06/05/07	149.66	2,133,020	-1.64%	-1.27%						70.57	79.09
06/06/07	148.71	1,583,910	-0.63%	-0.08%						69.62	79.09
06/07/07	144.40	2,821,393	-2.90%	-0.16%						65.31	79.09
06/08/07	147.81	2,017,289	2.36%	0.08%						68.72	79.09
06/11/07	148.39	1,828,042	0.39%	-0.52%						69.30	79.09
06/12/07	146.00	4,051,000	-1.61%	-0.57%						66.91	79.09
06/13/07	149.49	3,007,311	2.39%	-0.17%						70.40	79.09
06/14/07	149.60	6,309,200	0.07%	0.84%						70.51	79.09
06/15/07	150.09	3,979,800	0.33%	0.24%						71.00	79.09
06/18/07	147.95	3,339,042	-1.43%	-1.67%	**					68.86	79.09
06/19/07	146.79	3,096,945	-0.78%	-1.02%						67.70	79.09
06/20/07	143.20	4,492,000	-2.45%	-0.66%						64.11	79.09
06/21/07	145.81	5,599,900	1.82%	1.76%	**					66.72	79.09
06/22/07	143.75	8,288,801	-1.41%	1.40%	*					64.66	79.09
06/25/07	139.10	10,520,478	-3.23%	-1.93%	**					60.01	79.09
06/26/07	139.35	7,405,367	0.18%	0.84%						60.26	79.09
06/27/07	143.31	5,830,663	2.84%	0.85%						64.22	79.09
06/28/07	144.00	3,437,661	0.48%	0.75%						64.91	79.09
06/29/07	140.00	6,077,594	-2.78%	-1.28%						60.91	79.09
07/02/07	143.16	3,237,792	2.26%	0.70%						64.07	79.09
07/03/07	143.89	2,160,300	0.51%	-1.40%	*					64.80	79.09
07/05/07	144.66	2,533,900	0.54%	1.41%	*					65.57	79.09
07/06/07	144.80	1,611,329	0.10%	-0.53%						65.71	79.09
07/09/07	143.89	1,881,500	-0.63%	-0.66%						64.80	79.09
07/10/07	137.96	4,508,974	-4.12%	-0.71%						58.87	79.09
07/11/07	138.03	6,085,000	0.05%	-0.44%						58.94	79.09
07/12/07	142.12	3,374,576	2.96%	0.61%						63.03	79.09
07/13/07	142.89	2,555,410	0.77%	-0.02%						63.80	79.09
07/16/07	140.31	2,582,326	-1.81%	-1.28%						61.22	79.09
07/17/07	139.91	3,606,100	-0.29%	-0.12%						60.82	79.09
07/18/07	139.34	7,989,600	-0.41%	2.04%	**					60.25	79.09
07/19/07	138.93	4,176,749	-0.29%	1.13%						59.84	79.09
07/20/07	134.72	6,193,212	-3.03%	0.03%						55.63	79.09
07/23/07	134.25	3,207,058	-0.35%	0.00%						55.16	79.09
07/24/07	129.85	5,121,167	-3.28%	0.40%						50.76	79.09
07/25/07	129.28	6,650,637	-0.44%	-1.80%	**					50.19	79.09
07/26/07	124.25	9,131,077	-3.89%	-0.42%						45.16	79.09
07/27/07	123.18	7,799,612	-0.86%	-0.40%						44.09	79.09
07/30/07	127.25	6,246,741	3.30%	2.02%	**					48.16	79.09
07/31/07	121.22	8,727,639	-4.74%	-2.00%	**					42.13	79.09
08/01/07	118.30	12,591,755	-2.41%	-1.79%	**					39.21	79.09
08/02/07	115.63	8,151,811	-2.26%	-1.38%	*					36.54	79.09
08/03/07	108.35	27,845,792	-6.30%	-1.27%						29.26	79.09
08/06/07	113.81	28,288,319	5.04%	0.09%						34.72	79.09
08/07/07	116.89	24,823,069	2.71%	1.45%	*					37.80	79.09
08/08/07	121.12	18,271,113	3.62%	0.76%						42.03	79.09
08/09/07	114.05	16,067,124	-5.84%	-0.43%						34.96	79.09
08/10/07	110.20	14,705,213	-3.38%	-2.15%	***					31.11	79.09
08/13/07	109.60	10,088,400	-0.54%	0.81%						30.51	79.09

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Bruce S. Sherman v. Bear Stearns Companies Inc., et al.

Calculation of But-for Price and Inflation per Share of Bear Stearns' Common Stock during the Relevant Period

Date	BSC Price	BSC Volume	BSC Total Return	Abnormal Return	Sig[1]	Non-Fraud Related[2]	Expected Return	Adjusted Expected Return	Back-wardation	But-For Price	Inflation
						Calculation of But-for Price and Inflation					
08/14/07	106.00	11,251,396	-3.28%	0.81%						26.91	79.09
08/15/07	103.15	15,484,428	-2.69%	-0.01%						24.06	79.09
08/16/07	116.44	19,893,201	12.88%	8.87%	***					37.35	79.09
08/17/07	118.20	19,007,137	1.51%	-3.75%	***					39.11	79.09
08/20/07	116.30	8,026,491	-1.61%	-0.70%						37.21	79.09
08/21/07	117.20	6,679,107	0.77%	-0.37%						38.11	79.09
08/22/07	114.75	7,387,700	-2.09%	-3.57%	***					35.66	79.09
08/23/07	116.61	6,484,400	1.62%	1.94%	**					37.52	79.09
08/24/07	117.10	3,464,100	0.42%	-0.69%						38.01	79.09
08/27/07	112.20	4,595,750	-4.18%	-2.58%	***					33.11	79.09
08/28/07	108.42	8,464,500	-3.37%	1.20%						29.33	79.09
08/29/07	107.10	7,494,100	-1.22%	-2.62%	***					28.01	79.09
08/30/07	106.70	4,856,300	-0.37%	1.00%						27.61	79.09
08/31/07	108.66	5,143,600	1.84%	-0.94%						29.57	79.09
09/04/07	114.13	5,668,257	5.03%	2.56%	***					35.04	79.09
09/05/07	108.95	4,810,000	-4.54%	-2.30%	***					29.86	79.09
09/06/07	107.67	5,675,480	-1.17%	-1.14%						28.58	79.09
09/07/07	105.37	9,439,345	-2.14%	-1.39%	*					26.28	79.09
09/10/07	107.50	7,334,000	2.02%	1.18%						28.41	79.09
09/11/07	107.64	4,061,300	0.13%	-0.59%						28.55	79.09
09/12/07	110.05	4,908,268	2.24%	2.19%	***					30.96	79.09
09/13/07	114.83	5,732,150	4.34%	0.45%						35.74	79.09
09/14/07	117.19	5,582,446	2.06%	2.11%	**					38.10	79.09
09/17/07	115.38	3,696,800	-1.54%	0.13%						36.29	79.09
09/18/07	119.20	9,459,850	3.31%	-3.01%	***					40.11	79.09
09/19/07	115.64	12,037,650	-2.99%	-3.44%	***					36.55	79.09
09/20/07	115.46	14,410,621	-0.16%	1.96%	**					36.37	79.09
09/21/07	117.32	5,914,401	1.61%	0.92%						38.23	79.09
09/24/07	112.99	7,304,904	-3.69%	-1.97%	**					33.90	79.09
09/25/07	114.24	3,696,600	1.11%	2.04%	**					35.15	79.09
09/26/07	123.00	19,288,200	7.67%	6.03%	***					43.91	79.09
09/27/07	121.15	12,730,843	-1.50%	-2.80%	***					42.06	79.09
09/28/07	122.81	4,278,600	1.37%	2.28%	***					43.72	79.09
10/01/07	125.50	4,155,800	2.19%	-0.77%						46.41	79.09
10/02/07	128.57	3,761,800	2.45%	0.12%						49.48	79.09
10/03/07	128.28	3,692,300	-0.23%	-0.40%						49.19	79.09
10/04/07	127.61	3,475,700	-0.52%	0.07%						48.52	79.09
10/05/07	131.58	6,721,600	3.11%	1.23%						52.49	79.09
10/08/07	126.64	3,879,981	-3.75%	-2.21%	***					47.55	79.09
10/09/07	127.46	3,509,400	0.65%	-2.10%	**					48.37	79.09
10/10/07	125.81	3,300,000	-1.29%	-0.32%						46.72	79.09
10/11/07	124.14	5,704,000	-1.33%	-0.08%						45.05	79.09
10/12/07	123.16	2,891,800	-0.53%	-1.40%	*					44.07	79.09
10/15/07	120.69	3,538,100	-2.01%	0.14%						41.60	79.09
10/16/07	123.05	6,698,683	1.96%	3.80%	***					43.96	79.09
10/17/07	120.41	5,480,124	-2.15%	-2.51%	***					41.32	79.09
10/18/07	119.34	3,506,189	-0.89%	-0.02%						40.25	79.09
10/19/07	116.41	7,497,103	-2.46%	2.45%	***					37.32	79.09
10/22/07	117.85	4,797,900	1.24%	-0.15%						38.76	79.09
10/23/07	116.16	3,571,100	-1.43%	-2.49%	***					37.07	79.09
10/24/07	113.54	6,943,700	-2.26%	-0.74%						34.45	79.09
10/25/07	111.05	4,816,527	-2.19%	-1.39%	*					31.96	79.09
10/26/07	116.21	3,576,500	4.65%	-0.44%						37.12	79.09
10/29/07	114.54	2,332,400	-1.44%	-4.22%	***					35.45	79.09
10/30/07	112.77	2,811,400	-1.55%	0.22%						33.68	79.09

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Calculation of But-for Price and Inflation per Share of Bear Stearns' Common Stock during the Relevant Period

Date	BSC Price	BSC Volume	BSC Total Return	Abnormal Return	Sig[1]	Non-Fraud Related[2]	Expected Return	Adjusted Expected Return	Back-wardation	But-For Price	Inflation
						Calculation of But-for Price and Inflation					
10/31/07	113.60	5,173,300	0.74%	-1.86%	**					34.51	79.09
11/01/07	107.94	5,357,300	-4.98%	0.08%						28.85	79.09
11/02/07	102.16	9,547,467	-5.35%	-0.76%						23.07	79.09
11/05/07	99.91	7,501,789	-2.20%	1.88%	**					20.82	79.09
11/06/07	102.00	4,480,610	2.09%	1.05%						22.91	79.09
11/07/07	96.57	6,602,400	-5.32%	-0.36%						17.48	79.09
11/08/07	97.49	7,875,383	0.95%	0.18%						18.40	79.09
11/09/07	96.91	7,345,317	-0.59%	-1.39%	*					17.82	79.09
11/12/07	95.57	5,829,570	-1.38%	-1.72%	**					16.48	79.09
11/13/07	100.87	5,979,800	5.55%	-1.53%	*					21.78	79.09
11/14/07	103.27	12,600,634	2.38%	1.47%	*					24.18	79.09
11/15/07	99.94	6,024,000	-3.22%	-0.57%						20.85	79.09
11/16/07	99.07	5,821,670	-0.87%	0.32%						19.98	79.09
11/19/07	94.05	5,504,636	-5.07%	-1.94%	**					14.96	79.09
11/20/07	93.87	6,424,935	-0.19%	0.72%						14.78	79.09
11/21/07	91.28	8,184,134	-2.76%	0.72%						12.19	79.09
11/23/07	94.23	1,819,110	3.23%	-0.55%						15.14	79.09
11/26/07	91.04	3,730,466	-3.39%	1.24%						11.95	79.09
11/27/07	95.43	5,516,117	4.82%	1.60%	*					16.34	79.09
11/28/07	99.50	6,386,428	4.26%	-3.26%	***					20.41	79.09
11/29/07	98.64	3,570,022	-0.86%	0.83%						19.55	79.09
11/30/07	99.70	5,930,886	1.07%	-0.44%						20.61	79.09
12/03/07	98.40	3,017,240	-1.30%	-0.49%						19.31	79.09
12/04/07	93.61	4,943,435	-4.87%	-0.80%						14.52	79.09
12/05/07	92.60	5,304,006	-1.08%	-1.88%	**					13.51	79.09
12/06/07	98.21	5,739,790	6.06%	2.47%	***					19.12	79.09
12/07/07	100.94	5,551,214	2.78%	3.13%	***					21.85	79.09
12/10/07	105.75	5,049,840	4.77%	1.77%	**					26.66	79.09
12/11/07	100.30	7,254,661	-5.15%	1.16%						21.21	79.09
12/12/07	100.84	5,321,183	0.54%	-0.19%						21.75	79.09
12/13/07	98.39	5,885,177	-2.43%	-1.23%						19.30	79.09
12/14/07	95.29	4,906,245	-3.15%	-3.34%	***					16.20	79.09
12/17/07	94.07	3,463,797	-1.28%	-0.21%						14.98	79.09
12/18/07	92.59	6,708,457	-1.57%	0.87%						13.50	79.09
12/19/07	90.60	6,009,033	-2.15%	-3.65%	***					11.51	79.09
12/20/07	91.42	12,428,623	0.91%	0.74%		0	0.16%	0.16%	100.16%	12.33	79.09
12/21/07	89.95	10,725,454	-1.61%	-5.46%	***	0	3.86%	3.86%	103.86%	12.80	77.15
12/24/07	88.80	2,421,447	-1.28%	-2.29%	***	1	1.01%	-1.28%	98.72%	12.64	76.16
12/26/07	89.29	3,541,344	0.55%	0.01%		0	0.54%	0.54%	100.54%	12.71	76.58
12/27/07	87.71	3,848,499	-1.77%	0.57%		0	-2.34%	-2.34%	97.66%	12.41	75.30
12/28/07	87.35	3,083,033	-0.41%	-0.45%		0	0.04%	0.04%	100.04%	12.41	74.94
12/31/07	88.25	2,589,229	1.03%	-0.10%		0	1.13%	1.13%	101.13%	12.55	75.70
01/02/08	85.30	6,842,628	-3.34%	0.23%		0	-3.57%	-3.57%	96.43%	12.11	73.19
01/03/08	83.83	4,621,953	-1.72%	-0.68%		0	-1.05%	-1.05%	98.95%	11.98	71.85
01/04/08	78.87	11,143,793	-5.92%	-2.74%	***	1	-3.18%	-5.92%	94.08%	11.27	67.60
01/07/08	76.25	10,779,313	-3.32%	-2.04%	**	1	-1.28%	-3.32%	96.68%	10.90	65.35
01/08/08	71.17	15,459,025	-6.66%	-2.49%	***	1	-4.17%	-6.66%	93.34%	10.17	61.00
01/09/08	74.82	14,260,382	5.13%	3.23%	***	1	1.90%	5.13%	105.13%	10.69	64.13
01/10/08	77.75	13,262,149	3.92%	0.76%		0	3.16%	3.16%	103.16%	11.03	66.72
01/11/08	79.90	10,515,143	3.18%	2.26%	***	1	0.91%	3.18%	103.18%	11.38	68.52
01/14/08	81.80	6,822,325	2.38%	0.60%		0	1.78%	1.78%	101.78%	11.58	70.22
01/15/08	77.57	7,126,661	-5.17%	-0.67%		1	-4.50%	-5.17%	94.83%	10.98	66.59
01/16/08	79.05	7,512,636	1.91%	-0.76%		0	2.67%	2.67%	102.67%	11.28	67.77
01/17/08	74.44	9,413,978	-5.83%	-0.37%		0	-5.46%	-5.46%	94.54%	10.66	63.78
01/18/08	72.39	9,485,933	-2.75%	-2.48%	***	1	-0.27%	-2.75%	97.25%	10.37	62.02

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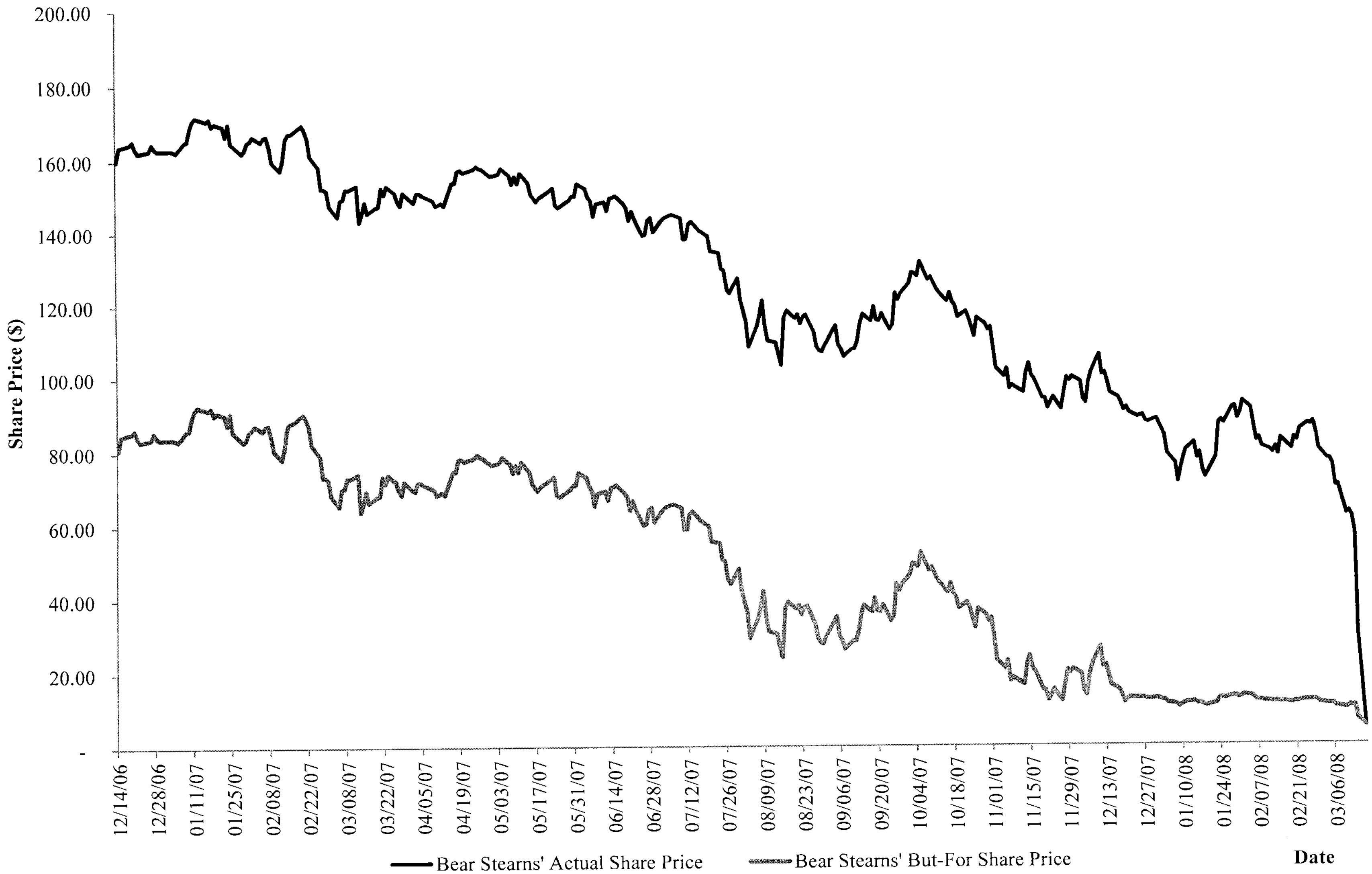
Date	BSC Price	BSC Volume	BSC Total Return	Abnormal Return	Sig[1]	Non-Fraud Related[2]	Calculation of But-for Price and Inflation: Expected Return	Adjusted Expected Return	Back-wardation	But-For Price	Inflation
01/22/08	77.84	17,866,899	7.53%	3.81%	***	1	3.72%	7.53%	107.53%	11.15	66.69
01/23/08	87.00	15,245,545	11.77%	5.50%	***	1	6.27%	11.77%	111.77%	12.46	74.54
01/24/08	87.74	9,447,241	0.85%	1.45%	*	1	-0.60%	0.85%	100.85%	12.57	75.17
01/25/08	87.03	7,474,246	-0.81%	3.13%	***	1	-3.94%	-0.81%	99.19%	12.46	74.57
01/28/08	91.10	6,859,348	4.68%	1.58%	*	1	3.10%	4.68%	104.68%	13.05	78.05
01/29/08	91.58	5,227,733	0.53%	0.04%		0	0.49%	0.49%	100.49%	13.11	78.47
01/30/08	88.26	8,166,053	-3.63%	-3.34%	***	1	-0.28%	-3.63%	96.37%	12.64	75.62
01/31/08	89.65	6,383,377	1.57%	0.05%		0	1.53%	1.53%	101.53%	12.83	76.82
02/01/08	92.89	4,936,790	3.61%	1.43%	*	1	2.19%	3.61%	103.61%	13.29	79.60
02/04/08	91.00	3,713,701	-2.03%	0.09%		0	-2.13%	-2.13%	97.87%	13.01	77.99
02/05/08	86.11	5,723,778	-5.37%	0.43%		0	-5.80%	-5.80%	94.20%	12.25	73.86
02/06/08	82.25	7,425,340	-4.48%	-2.74%	***	1	-1.74%	-4.48%	95.52%	11.71	70.54
02/07/08	83.03	6,507,605	0.95%	-0.70%		0	1.65%	1.65%	101.65%	11.90	71.13
02/08/08	80.67	6,093,644	-2.84%	-0.49%		0	-2.36%	-2.36%	97.64%	11.62	69.05
02/11/08	79.76	4,281,422	-1.13%	-0.25%		0	-0.88%	-0.88%	99.12%	11.52	68.24
02/12/08	78.93	5,703,524	-1.04%	0.50%		0	-1.54%	-1.54%	98.46%	11.34	67.59
02/13/08	80.53	6,495,020	2.03%	1.63%	**	1	0.40%	2.03%	102.03%	11.57	68.96
02/14/08	78.47	5,542,760	-2.56%	-0.59%		0	-1.97%	-1.97%	98.03%	11.34	67.13
02/15/08	82.79	20,091,047	5.51%	4.66%	***	0	0.85%	0.85%	100.85%	11.44	71.35
02/19/08	80.02	7,214,755	-3.35%	-0.57%		0	-2.77%	-2.77%	97.23%	11.12	68.90
02/20/08	83.05	7,336,449	3.79%	0.82%		0	2.96%	2.96%	102.96%	11.45	71.60
02/21/08	82.23	5,892,273	-0.99%	0.23%		0	-1.21%	-1.21%	98.79%	11.31	70.92
02/22/08	85.16	7,266,415	3.56%	1.48%	*	1	2.09%	3.56%	103.56%	11.71	73.45
02/25/08	86.72	6,845,720	1.83%	0.16%		0	1.67%	1.67%	101.67%	11.91	74.81
02/26/08	86.48	4,789,458	-0.28%	0.49%		0	-0.76%	-0.76%	99.24%	11.82	74.66
02/27/08	87.30	5,245,633	0.95%	-1.17%		0	2.12%	2.12%	102.12%	12.07	75.23
02/28/08	84.22	4,188,824	-3.53%	-0.08%		0	-3.45%	-3.45%	96.55%	11.65	72.57
02/29/08	79.86	5,544,260	-5.18%	-0.50%		0	-4.68%	-4.68%	95.32%	11.11	68.75
03/03/08	77.32	5,409,421	-3.18%	-0.81%		0	-2.37%	-2.37%	97.63%	10.84	66.48
03/04/08	77.17	5,282,016	-0.19%	-0.33%		0	0.13%	0.13%	100.13%	10.86	66.31
03/05/08	75.78	6,814,472	-1.80%	-1.94%	**	0	0.14%	0.14%	100.14%	10.87	64.91
03/06/08	69.90	9,757,934	-7.76%	-2.86%	***	1	-4.90%	-7.76%	92.24%	10.03	59.87
03/07/08	70.08	8,034,812	0.26%	-0.06%		0	0.32%	0.32%	100.32%	10.06	60.02
03/10/08	62.30	32,470,867	-11.10%	-7.07%	***	0	-4.03%	-4.03%	95.97%	9.66	52.64
03/11/08	62.97	55,014,343	1.08%	-6.59%	***	0	7.67%	7.67%	107.67%	10.40	52.57
03/12/08	61.58	26,806,066	-2.21%	-0.30%		0	-1.91%	-1.91%	98.09%	10.20	51.38
03/13/08	57.00	70,741,056	-7.44%	-9.53%	***	0	2.09%	2.09%	102.09%	10.41	46.59
03/14/08	**30.00**	**186,986,843**	**-47.37%**	**-41.08%**	***					**6.83**	**23.17**
03/17/08	**4.81**	**166,719,539**	**-83.97%**	**-77.24%**	***					**4.81**	**0.00**

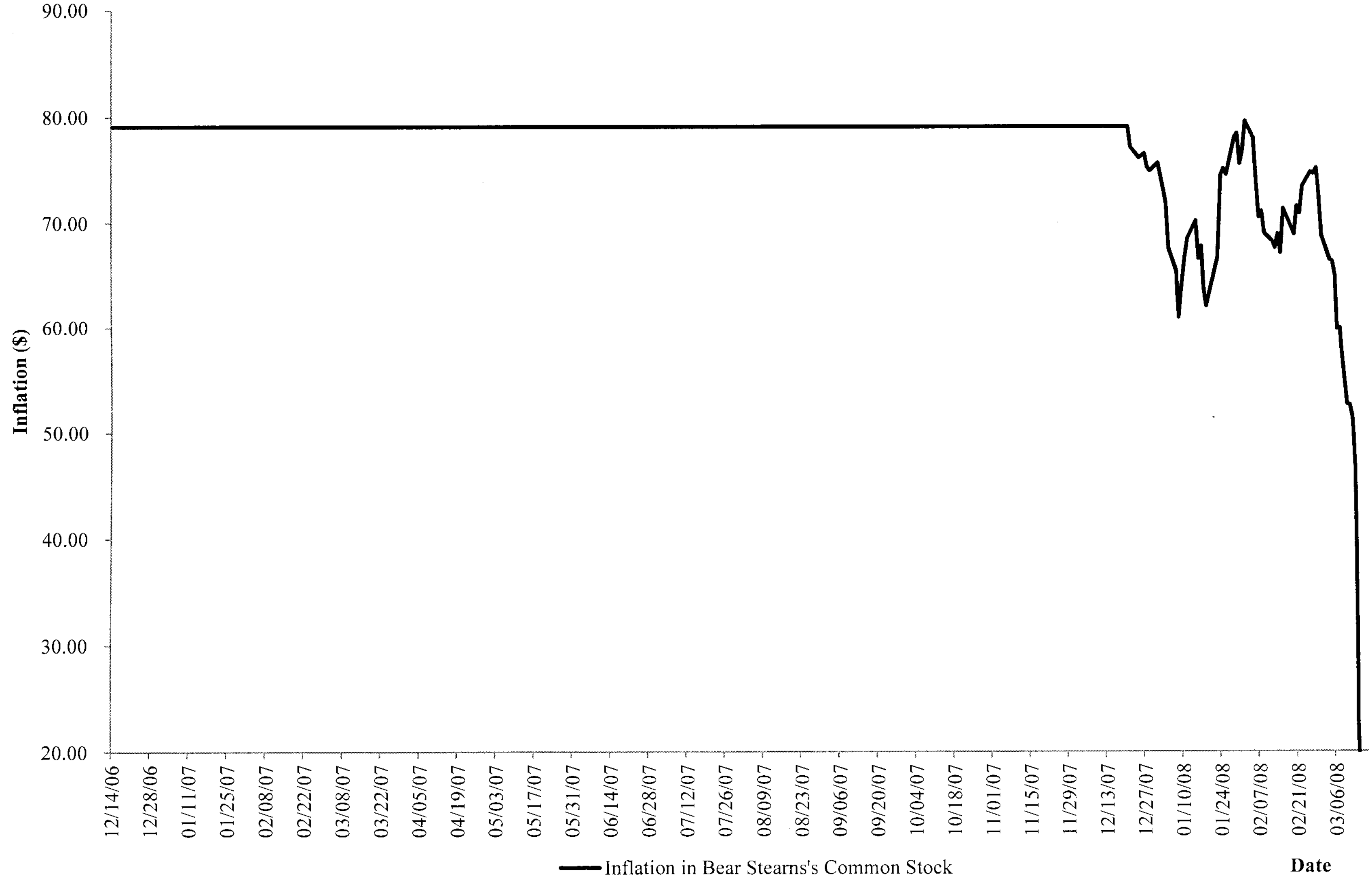
Notes:
[1] ***, **, * represent statistical significance at the 1%, 5%, and 10% levels, respectively.
[2] The value is equal to 1 if the abnormal return on certain day is caused by non-fraud related news.
Sources: Bloomberg L.P. and Kenneth R. French's data library.

Attachment 32
Bruce S. Sherman v. Bear Stearns Companies Inc., et al.
Bear Stearns' Actual and But-For Share Prices During the Relevant Period



Source: Bloomberg L.P.

Attachment 33
Bruce S. Sherman v. Bear Stearns Companies Inc., et al.
Inflation on Bear Stearns' Common Stock During the Relevant Period



Source: Bloomberg L.P.

Attachment 34

Bruce S. Sherman v. Bear Stearns Companies Inc., et al.

Calculation of Damages per Share for the Leakage Period and the Disclosure Dates

Date(s)		Closing Price	Actual Return	Abnormal Return		Damages per Share		Sig[1]
12/20/2007	$	91.42						
3/13/2008	$	57.00	-37.65%	-25.71%	$	79.09	[2]	***
3/13/2008	$	57.00						
3/14/2008	$	30.00	-47.37%	-41.08%	$	23.42	[3]	***
3/14/2008	$	30.00						
3/17/2008	$	4.81	-83.97%	-77.24%	$	23.17	[4]	***

Notes:

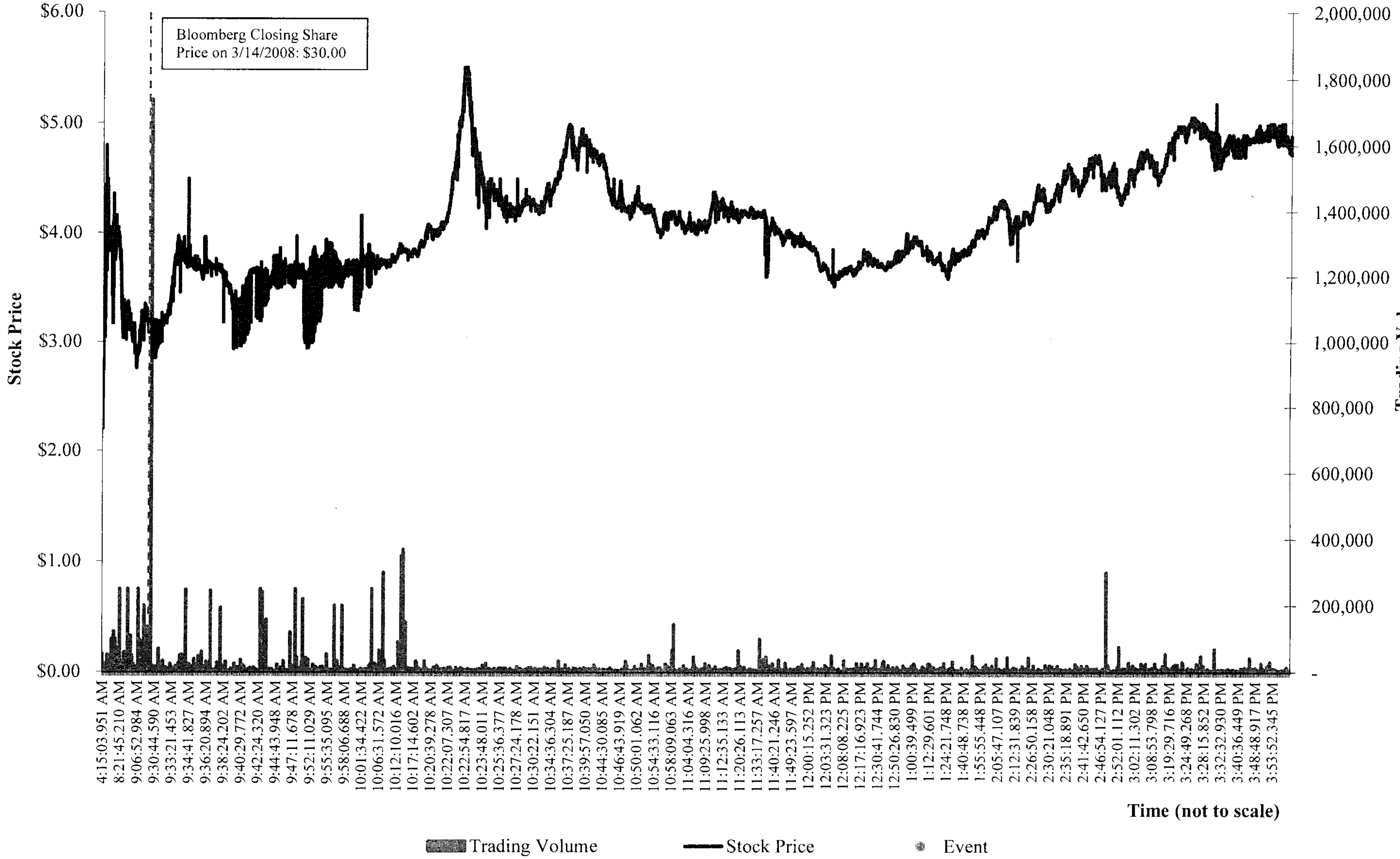
[1] ***, **, * represent statistical significance at the 1%, 5%, and 10% levels, respectively.

[2] The damage per share is calculated based on the backwardation method during the Leakage Period which varies depending on the trading date. *See* Attachment 31 for the daily damage per share. The amount shown represents the damage per share on December 20, 2007 for the Leakage Period.

[3] The damage per share is calculated by multiplying $57.00, the prior day's closing price, by -41.08% the abnormal return on 03/14/2008.

[4] The damage per share is calculated by multiplying $30.00, the prior day's closing price, by -77.24% the abnormal return on 03/17/2008.

Attachment 35
Bruce S. Sherman v. Bear Stearns Companies Inc., et al.
Bear Stearns' Stock Price and Volume Movement on March 17, 2008



Source: TAQ NYSE Data

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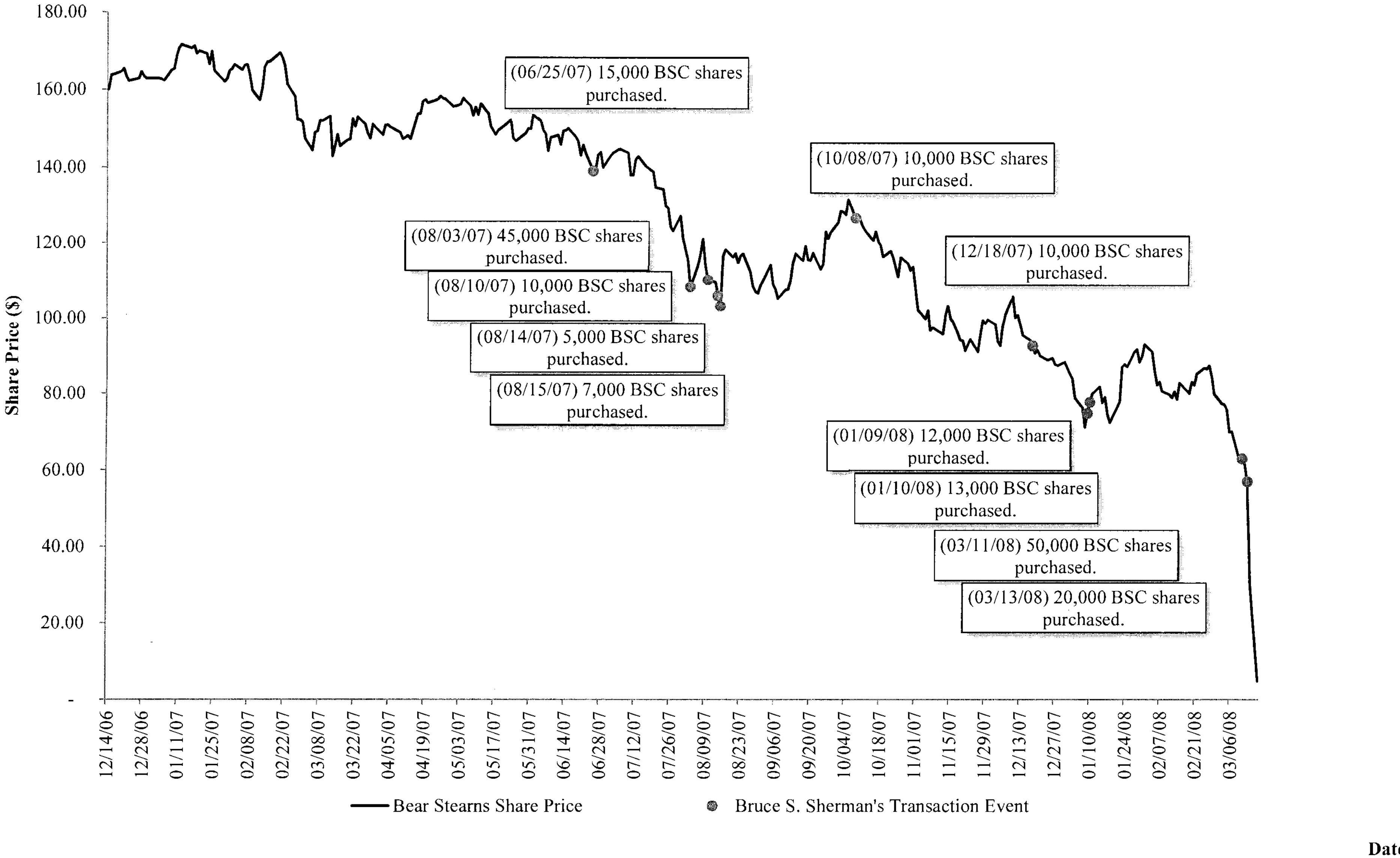
Attachment 36
Bruce S. Sherman v. Bear Stearns Companies Inc., et al.
Bruce S. Sherman's Transaction History During the Class Period



Source: Bloomberg L.P.

Attachment 37

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Bruce S. Sherman v. Bear Stearns Companies Inc., et al.

Calculation of Aggregate Damages for Shares of Bear Stearns' Common Stock Purchased by Bruce S. Sherman during the Relevant Period

Panel A. Purchases and Sales of Bear Stearns' Common Stock by Bruce S. Sherman During the Relevant Period

Date	Security	Buy or Sell	Quantity	Price
Beg. Holding	Common		32,150	$ 155.89 [1]
6/25/07	Common	Buy	15,000	140.76
8/3/07	Common	Buy	45,000	110.14
8/10/07	Common	Buy	10,000	108.60
8/14/07	Common	Buy	5,000	106.12
8/15/07	Common	Buy	7,000	103.15
10/8/07	Common	Buy	10,000	126.74
12/18/07	Common	Buy	10,000	91.54
1/9/08	Common	Buy	12,000	72.13
1/10/08	Common	Buy	13,000	75.95
3/11/08	Common	Buy	50,000	61.37
3/13/08	Common	Buy	20,000	53.77
3/19/08	Common	Sell	229,150	5.23

Panel B. Damages for Shares Purchased during the Relevant Period and Sold on March 19, 2008 Based on First-In-First-Out ("FIFO") Matching

Shares Sold	Sale Price	Purchase Date	Purchase Price	Out-of-Pocket Loss Per Share	Out-of-Pocket Loss	Inflation Per Share [2]	Damage Per Share [3]	Aggregate Damages Before Prejudgment Interest
32,150	$ 5.23	12/13/06 [1]	$ 155.89	$ 150.66	$ 4,843,719	$ -	$ -	$ -
15,000	5.23	6/25/07	140.76	135.53	2,032,950	78.45	78.45	1,176,801
45,000	5.23	8/3/07	110.14	104.91	4,720,950	78.45	78.45	3,530,403
10,000	5.23	8/10/07	108.60	103.37	1,033,700	78.45	78.45	784,534
5,000	5.23	8/14/07	106.12	100.89	504,450	78.45	78.45	392,267
7,000	5.23	8/15/07	103.15	97.92	685,440	78.45	78.45	549,174
10,000	5.23	10/8/07	126.74	121.51	1,215,100	78.45	78.45	784,534
10,000	5.23	12/18/07	91.54	86.31	863,100	78.45	78.45	784,534
12,000	5.23	1/9/08	72.13	66.90	802,800	63.57	63.57	762,879
13,000	5.23	1/10/08	75.95	70.72	919,360	66.15	66.15	859,926
50,000	5.23	3/11/08	61.37	56.14	2,807,000	52.03	52.03	2,601,740
20,000	5.23	3/13/08	53.77	48.54	970,800	46.05	46.05	920,984
Total					$ 21,399,369			**$ 13,147,777**

Panel C. Aggregate Damages After Prejudgment Interest

Shares Sold	Purchase Date	Date of Report	Number of Years [4]	Prejudgment Interest Rate [5]	Aggregate Damages Before Prejudgment Interest	Prejudgment Interest Amount [6]	Aggregate Damages After Prejudgment Interest
32,150	12/13/06	3/2/15	8.22	9.00%	$ -	$ -	$ -
15,000	6/25/07	3/2/15	7.69	9.00%	1,176,801	814,508	1,991,309
45,000	8/3/07	3/2/15	7.58	9.00%	3,530,403	2,409,573	5,939,976
10,000	8/10/07	3/2/15	7.56	9.00%	784,534	534,107	1,318,641
5,000	8/14/07	3/2/15	7.55	9.00%	392,267	266,666	658,933
7,000	8/15/07	3/2/15	7.55	9.00%	549,174	373,197	922,371
10,000	10/8/07	3/2/15	7.40	9.00%	784,534	522,693	1,307,227
10,000	12/18/07	3/2/15	7.21	9.00%	784,534	508,958	1,293,493
12,000	1/9/08	3/2/15	7.15	9.00%	762,879	490,772	1,253,651
13,000	1/10/08	3/2/15	7.15	9.00%	859,926	552,991	1,412,917
50,000	3/11/08	3/2/15	6.98	9.00%	2,601,740	1,633,964	4,235,703
20,000	3/13/08	3/2/15	6.97	9.00%	920,984	577,949	1,498,933
Total					**$ 13,147,777**	**$ 8,685,378**	**$ 21,833,155**

Notes:

[1] Sherman reported holdings of 32,150 shares of Bear common stock at the close of business on December 13, 2006. For purposes of this calculation, I assume the shares were purchased on December 13, 2006, prior to the start of the Class Period, at the closing price of $155.89. These shares are excluded from the damages calculation.

[2] *See* Attachment 31 for the inflation per share calculation. The inflation per share is adjusted based on the PSLRA 90-day look-back provision.

[3] The damage per share is equal to the lesser of the out-of-pocket loss per share and the inflation per share.

[4] Number of years between date or purchase and the date of this expert report based on actual number of days divided by 365.

[5] *See* N.Y. C.P.L.R. § 5001 ("[where] ... damages were incurred at various times, interest shall be computed upon each item from the date it was incurred or upon all of the damages from a single reasonable intermediate date," and that, "[interest] shall be at the rate of nine per centum per annum"); Mallis v. Bankers Trust Co., 717 F. 2d 683, 694-95 (2d Cir. 1983) (applying § 5001 and finding that plaintiffs bringing NY common law fraud claims were "entitled to prejudgment interest as a matter of right").

[6] Prejudgment interest calculated on the aggregate damages before prejudgment interest at 9% simple interest per annum between the date of purchase and the date of this report. I reserve the right to update the prejudgment interest calculation through the date of judgment if requested by counsel.